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Society of Canadian Ornithologists/Société des Ornithologistes du Canada
Website: www.nmnh.si.edu/BIRDNET/SOC CanOrn/

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NEWS ITEMS AND ANNOUNCEMENTS

2002 Joint Meeting of American Ornithologists' Union and Society of Canadian Ornithologists

This will be held in conjunction with the 3rd North American Ornithological Council (NAOC)

NEW ORLEANS
SEPT 24-30, 2002
See last Picoides for details or check SCO website.

NEW SCO/SOC COUNCILLORS ELECTED:

The results of the election of March 31, 2002 have been compiled. The new Council includes Dr. Susan Hannon, V-P, and Councillors Dr. Cheri Gratto-Trevor, Dr. Kevin Teather, Dr. Rob Butler, Dr. Bob Clark, Dr. Charles Francis, Dr. Roger Titman, and Dr. Marc-André Villard. Thank you to everyone who let his/her name stand. The term of office officially begins at the annual meeting in September this year.

Free Memberships! Students can apply for a 3-year free membership to the AOU, and the SCO will match it. Apply to the AOU first and then contact Nancy Flood, nflood@cariboo.bc.ca

VISITthe SCO/SOC web site: www.nmnh.si.edu/BIRDNET/SOC CanOrn/
It is our web connection through the Ornithological Societies of North America (OSNA)

EDITOR'S COMMENTS

I now find myself juggling this job with a paying full-time job, and a host of volunteer activities which I enthusiastically took on in the months I was unemployed! So I am especially grateful to all the contributors to this issue who gladly sent articles with no begging needed from me, and I value the relationships I have made through this medium, and hope that other contributors will continue to fill these pages with the information they feel is important. Thank you Kathy, for the support you have given me during your term of office. I will miss those frantic missiles starting with "I hope this isn't too late..."! Could all the present and future councillors think about one article they could write during their term of office about an issue of interest or about what is happening in the ornithological world in their province or area? I will be calling on you. The deadline for submissions to the next issue of Picoides is October 1, after the New Orleans meeting.

-Dorothy

SOCIETY OF CANADIAN ORNITHOLOGISTS/SOCIÉTÉ DES ORNITHOLOGISTES DU CANADA AND BIRD STUDIES CANADA ANNOUNCES THE FRED COOKE STUDENT AWARD

The Society of Canadian Ornithologists/Société des Ornithologistes du Canada in collaboration with Bird Studies Canada has recently established an annual award to be known as the Fred Cooke Student Award in acknowledgement of Fred's recent retirement and his outstanding contributions to Canadian Ornithology, including his longstanding support of students in avian biology. We plan to provide funds of at least $1000 each year to help a student in her/his career by assisting in their attendance at a scientific meeting with relevance to Canadian Ornithology.

We have already received $12,000 towards the establishment of such an award, but I would like to encourage you personally to make a donation to this important SCO/BSC enterprise. The more we receive, the more effective will be our contribution. Our aim is to set aside an investment of at least $20,000 (?) in order to generate the revenue for a substantive award.

If you would like to contribute in this worthwhile initiative, please send a donation and specify that it is to be added to the "THE FRED COOKE STUDENT AWARD" to Dr. Tom Dickinson, Dept. Biological Sciences, University College of the Cariboo, 900 McGill Rd., Box 3010, Kamloops, BC. V2C 5N3

Yours sincerely,
Kathy Martin, President,
Society of Canadian Ornithologists/
Societe des Ornithologistes du Canada

THE FRED COOKE STUDENT AWARD

1. The award shall be named "The Fred Cooke Student Award," but may be abbreviated to "The Cooke Award." Its purpose shall be to honour the contributions of Professor Fred Cooke to Canadian ornithology by supporting ornithological conference travel or research activities by a student at a Canadian university.

2. The Award shall be open to any student conducting ornithological research at a Canadian university, except that previous recipients of the Award (and other persons noted in clause 16) shall not be eligible.

3. The Award shall be for: Travel to ornithological conferences at which the student will make a verbal or poster presentation, or research in any aspect of ornithology anywhere in the world.

4. Bird Studies Canada and SCO/SOC consider it important that the research makes a significant contribution to ornithological knowledge. Provided this requirement is met, the selection of the award recipient should be based on the quality of the proposed research and probability of successful completion.

5. The Award shall not be used to pay a stipend for the recipient. It may be used for any other research or travel expense as outlined in item #3.

6. There shall be one Award per year, in the amount of $1,000, provided that an acceptable application is submitted. The grant will be paid directly to the award recipient by Bird Studies Canada.

7. SCO/SOC shall be responsible for advertising details and application procedures for the Award, through *Picoides* and in any other way it considers appropriate, and shall be the recipient of all applications.

8. Applications shall be considered by the SCO/SOC grants committee, which will select the winning application. Bird Studies Canada will review the winning application and confirm that it meets the objectives of the award. In the event that the winning application is deemed not to meet those objectives (see item #3), Bird Studies Canada may decline to make an Award in that year. The Executive Director of Bird Studies Canada will inform the SCO/SOC grants committee of BSC's decision within 2 weeks of notification of the winning application. Upon receipt of confirmation of the Award from BSC, SCO/SOC shall inform the recipient, will announce the award in the next issue of *Picoides* and may publicize the award in other ways. After SCO/SOC has informed the recipient, and the agreement (in # 9) has been signed, BSC will send a cheque for $1,000 to the award recipient. BSC may also announce the award in any way it considers suitable.

9. Recipients of the Award will be required to: Provide BSC with a progress report of not more than 2 pages, including a statement of expenditures from the Award, by 1 December of the year of the Award.

Write a brief (500-1000 word) popular account of his or her research, including objectives and preliminary findings, for publication in *Picoides* and/or BSC's newsletter, by 1 March of the year following receipt of the Award. BSC will provide a statement to this effect, to be signed by the recipient at the time the grant is awarded.

10. All announcements of the availability of the grant or of the recipients of the Award published in *Picoides* or elsewhere shall include the following statement: "The Fred Cooke Student Award is funded by Bird Studies Canada and the Society of Canadian Ornithologists /Société des Ornithologistes du Canada."

11. Scientific papers and other articles based on the research funded by the Award shall acknowledge support from The Fred Cooke Student Award of Bird Studies Canada and the Society of Canadian Ornithologists/ Société des Ornithologistes du Canada.

12. Bird Studies Canada makes a commitment to fund the Fred Cooke Student Award on an ongoing basis. Costs to SCO/SOC and BSC for administering the Award shall be the responsibility of each organization.

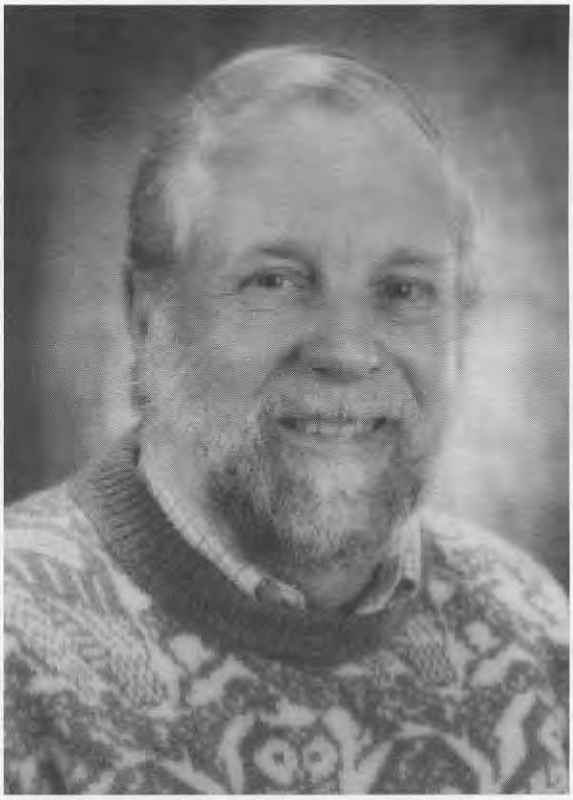
13. The following shall be ineligible for the award: officers, councillors and grant committee members of SCO/SOC; Board and staff members of BSC.

Kathy Martin, Society of Canadian Ornithologists
Michael Bradstreet, Bird Studies Canada

BIOGRAPHY OF DR. FRED COOKE

Connie Smith, Centre for Wildlife Ecology, SFU

Fred Cooke's interest in birds began at the tender age of three when his father began taking him cycling in the English countryside. He pursued this interest further during his education at Bootham School in York, where he specialised in natural history, and at Cambridge University where he received his MA in natural science and his PhD in genetics. After obtaining his doctorate in 1965, he immigrated to Canada where he was appointed Assistant Professor in Biology at Queen's University.



Beginning in 1968, Fred and various colleagues commenced a continuous, long-term monitoring program to study Snow Goose behaviour and ecology. This species has two colour morphs, a blue and a white. In the 19th century these two morphs appeared to be completely segregated on their breeding and wintering areas, and were considered to be separate species. Cooke et al. undertook a genetic analysis of populations that breed in the Hudson's Bay region and winter primarily in the Louisiana and Texas coastal marshes. In brief, these studies showed that 1) the plumage colour differences are controlled by differences in a single gene, 2) there is no difference in fitness between blue and white morphs, 3) pair formation occurs on the wintering grounds where birds from different breeding areas are mingled, 4) females are highly philopatric to their natal area, and 5) mating is non-random with respect to morph, with offspring of white parents usually choosing white mates, offspring of blue parents usually choosing blue mates, and those of mixed parentage choosing a mate of either colour.

The Snow Goose study provides a remarkably thorough example of the integration of field and laboratory data that incorporates genetics, behaviour, and ecology. The results are summarized in the 1995 book, "The Snow Geese of La

Pérouse Bay: Natural Selection in the Wild", co-authored with Rocky Rockwell and Dov Lank.

After years of Snow Goose work and in search of a new challenge, Fred accepted the directorship of the newly established Chair of Wildlife Ecology at Simon Fraser University in 1993. This research position, set up by the Canadian Wildlife Service (CWS) and the Natural Sciences and Engineering Research Council (NSERC), was designed to carry out research on bird populations of conservation and management concern to the CWS. The Chair has established several long-term projects since its inception, researching seabirds, waterfowl, grebes and shorebirds at locations throughout Western Canada. Fred has been instrumental in setting up many of these projects, but nowhere more so than in the ongoing study of Marbled Murrelets, a threatened seabird that nests in old growth forests. Little was known of this elusive bird when the Chair began its study - the first nest in British Columbia was only located in 1990! Since the Chair began its study in 1994, 138 nests have been located by radio-telemetry and characterized, allowing analysis of breeding habitat requirements. A capture-mark-recapture program has enabled evaluation of the demographic status of the species. These data are crucial to the management decisions that are currently being made by government agencies with regard to Marbled Murrelets.

Fred has received many honours in his long and illustrious career, including a Killiam Fellowship in 1987, the William Brewster Memorial Award from the American Ornithologists' Union in 1990, the D.H. Speirs Award from the Society of Canadian Ornithologists in 1993, the Career Achievement Award of the Confederation of University Faculty Associations of British Columbia in 1999, and the Order of Canada, the highest honour granted by Canada for lifetime achievement, in 2001.

Although Fred retired from Simon Fraser in April, 2002, and now lives in Norfolk, England, he is still very active on the ornithological scene. He is associated with the British Trust for Ornithology and the University of East Anglia, and is President-Elect of the American Ornithologists Union, a post he will assume in October 2002.

AND NOW A WORD FROM FRED:
f.cooke@uea.ac.uk April 1, 2002

Sylvia and I moved back to Britain last September, to a small house that we had bought a couple of years ago in anticipation of our retirement. I'm sure a lot of our Canadian friends must imagine that we've abandoned a country that has been our home for many years, but for us we've always felt at home on both sides of the Atlantic, and still we plan to visit Canada frequently. Our new home is an eighteenth century 3 bedroom cottage on the edge of a small village in Norfolk on the English east coast. The village comprises perhaps 80 houses, a castle, a pub, a church and a post office. It is surrounded by an estate managed largely for pheasant shooting so it is likely to stay rural for many years. We even have a gamekeeper as our neighbour. Sylvia keeps busy on our large garden and we've recently constructed a stream to add diversity to the scene from our windows.

The area is one of the best parts of England for birds, with the Wash, UK's largest estuary less than 6 km away, and woodland, heath and marshland habitat within walking distance of the village. We do hope our many Canadian friends will visit and give us a chance to show off some of the highlights of the area. If only we had enough time to explore all of our new environment, but retirement allows little time for leisure. We seem to be busier than ever. We are easing into retirement gradually and still have active research projects in BC. The Marbled Murrelet project has another year to run and I'm still actively involved with Bird Studies Canada, necessitating several trips back to Canada during the next few years. In addition my term as president of the AOU begins in September. But we are also getting involved in the academic world in Britain. I have an honorary position at the University of East Anglia in Norwich, which is about 40 miles from our home and I also am active in some of the programs of the British Trust for Ornithology, also nearby. We've joined some local naturalist groups and I've been doing some bird atlas work in preparation for a Norfolk Atlas of Breeding and Wintering Birds. We do try to make time for bird-watching and a typical walk down to the Wash allows me to see the wintering Dark-bellied Brent Geese and the Pinkfeet, Short-eared Owls, Oystercatchers and Redshank. Curlew fly over our cottage each morning and evening and a local Barn Owl often feeds in the field next to our house. The biggest challenge of being retired is learning to use the computer without all the wonderful help that was available to me at Simon Fraser University. I need to find myself a teenager. The biggest pleasure of retirement is knowing that if it doesn't get done today, it can always be left until tomorrow. Do come and visit if you're over in Britain.

Our address is Larkins Cottage, 6 Lynn Road, Castle Rising, Norfolk PE31 6AB, UK.

NEWS FROM MCGILL UNIVERSITY'S AVIAN SCIENCE AND CONSERVATION CENTRE

David M. Bird, Ph.D. bird@nrs.mcgill.ca
www.nrs.mcgill.ca/ascc Feb. 2002.

THIS GRADUATE STUDENT IS A TRUE "NIGHT-OWL"!

Ngaio Richards, an M.Sc. student co-supervised by Dr. Bird and Dr. Pierre Mineau of the Canadian Wildlife Service, has been out there almost every night in 2001studying the elusive Eastern Screech-owl in the apple orchards of Quebec's Mont Saint Hilaire and Rougemont region. These small owls are not always easy to find in the dead of night, so Ngaio has put up dozens of wooden nestboxes to induce the birds to use them for nesting and roosting. This makes it easier for her to find the regurgitated pellets of undigested materials like bones, feathers, fur and insect parts, so that she can examine them by day in the laboratory to ascertain the owls' diet. Also during the daylight hours, Ngaio has been busy analyzing tissues of collected rodents (not one of her more "fun" chores - Ngaio is a devout animal-lover!) and blood samples from the owls to determine their levels of organochlorines, organophophates and anticoagulants, chemicals that some orchard farmers rely on heavily. Her supervisors have no idea when this hard-working student finds time to sleep!

LOGGERHEAD SHRIKES EXPERIMENTALLY RELEASED INTO THE WILD

The efforts by the Canadian Wildlife Service and many others (including the ASCC) to save the eastern subspecies of the Loggerhead Shrike took a giant leap forward this past summer when a small number of fledged young were released experimentally into the wild. Special release cages were built and installed in three locations right in the heart of excellent shrike habitat on privately owned land in Ontario. The idea was to induce captive-bred pairs to produce youngsters which would be "trained" to catch live prey and then slowly released into the wild; the parents were returned to the breeding facilities at the Toronto Zoo and the ASCC. Each of the three pairs raised a total of 10 youngsters and all of them were released into the wild without incident.

ARE CITY ENVIRONMENTS HAZARDOUS FOR PEREGRINE FALCONS?

Few things are certain in life, but in Montreal there would appear to be two. First, the Peregrine Falcons will indeed return to nest on the 32nd floor of Place Victoria, and second, they will not produce more than one youngster! ASCC staff have no idea why the latter is so, except to speculate that maybe the female or male has some kind of reproductive disability, e.g. an ovarian infection or low sperm count, respectively. Anyway, 2001 was kinder to the falcons because their youngster survived the difficult first few weeks of flight and likely managed to join the migration. Marcel Gahbauer, the ASCC graduate student who is using satellites to track the migratory movements of city-dwelling vs. cliff-dwelling peregrines in a collaborative study with the Canadian Peregrine Foundation based in Toronto (www.peregrine-foundation.ca), is uncovering some very interesting information. First, Nate, the little male from the Toronto area, is making history. For the third year in a row, this bird headed down south to winter in Cartagena, Colombia. He even abandoned his apparent female mate in Toronto to undertake the arduous journey. Closer to home, Dieppe, another male who was captured on the cliff (his namesake) overlooking the town of Mont Ste.-Hilaire in 2001 wandered around eastern Ontario and northern New York state before either he perished or his transmitter died. A third tracked peregrine, Ruby, was residing only five miles south of the World Trade Center Towers in New York City when they went down.

The main thrust of Marcel's thesis research is to find out whether cities, with all their hazards including treacherous wind shears, mirror-sided buildings, traffic, etc., are good or bad for peregrines. If city falcons produce lots of youngsters but none of them survive to join the breeding population, and there are no new city birds to replace the adults when they eventually die, the empty urban territories will attract falcons from cliff nests in rural regions. That turns the city habitats into major sinkholes for peregrines as opposed to instead comprising a source of new birds. While we cannot stop peregrines from nesting in cities, we do not necessarily have to encourage them either.

Speaking of encouragement, there is good and bad news for two of Montreal's three peregrine pairs. First, the bad news. The pair that has previously raised good-sized fam-

ilies, e.g. 3 or 4 young, on the abandoned flour mill in the east end are losing their home. The building is slated for demolition this winter. Also, the pair nesting on the Mercier Bridge will be faced with constant disturbance as the federal body in charge of the bridge must undertake major renovations to the bridge. Now the good news. Both the feds and the province of Quebec are stepping in to help the birds. For the east-end pair, the Société de la faune et des parcs du Québec has agreed to collaborate with the ASCC to install an attractive nesting box on a nearby active flour mill. And The Jacques Cartier and Champlain Bridges Inc. has joined them in setting up not one but two predator-free nesting boxes on pylons of the Mercier Bridge over land. This is important because otherwise the young generally take their first flight out of the nest right into the water where they drown.

OTHER ASCC NEWS...

The 2001 edition of the Bird Course taught by Drs. Bird and Titman, with its field trips, laboratory sessions and lectures aimed at a general audience, was another big success! In 2002, the course will run from Monday, May 13 through to Friday, May 17. Interested parties should contact David Bird at 514-398-7760 ph; 514-398-7990 fax; bird@nrs.mcgill.ca, or visit the ASCC web site.

In 2001, Julie Simard, under the supervision of Dr. Titman, successfully completed her M.Sc. on the effects of long-term timber harvesting on Red Crossbills in eastern North America. Dr. Titman has taken on three new M.Sc. students in 2001. Josie Rousseau will study urban bird habitats, Claude Drolet is collecting data on wintering diving ducks in the St. Lawrence River, and Tina Newbury is evaluating the impact of low-level military jet flights on duck behaviour in Labrador.

Through the Point Reyes Bird Observatory in California, the U.S. Navy provided generous funding to the ASCC to test two different telemetry techniques on the western shrike subspecies held at the centre. This useful study was completed in the summer of 2001.

The Province of Quebec Society for the Protection of Birds funded a spring study to determine whether skyscrapers lit at night are causing the deaths of migratory songbirds which are attracted by the light. Shawn Gauvin, a graduate student at University of Quebec at Montreal, carried out the second phase of the study.

2002 TO BE A BANNER YEAR FOR GRADUATE STUDENTS OF THE ASCC!

No less than six graduate students should be receiving their M.Sc. degrees in 2002! The following students await their final approvals on their M.Sc. theses:

1) Bill Druker, supervised by Rodger Titman, Associate Director of the ASCC, is putting the final touches on his accepted M.Sc. thesis on the behaviour of endangered Hawaiian Crows held in captivity as part of a breeding program;

2) Marc Pauze, jointly supervised by Drs. Bird and Titman, evaluated the impact of nesting Red-tailed Hawks and Great Horned Owls on duck populations in prairie habitat enhanced by the Institute for Wetland and Waterfowl Research operated by Ducks Unlimited;

3) Alain Fontaine studied habitat use by the red-tails as part of the study above under the joint supervision of Drs. Titman and Bird and is working on his final draft while employed by the Canadian Wildlife Service;

4) Joanna Coleman, supervised by Dr. Bird with the assistance of Dr. Laird Shutt of the Canadian Wildlife Service, examined habitat selection as well as the impacts of organochlorine chemicals on urban-nesting Sharp-shinned Hawks in the Montreal area and awaits final approval of her thesis;

5) Jovette Bouchard, supervised by Dr. Titman, has submitted her thesis which involved DNA testing to determine the rate of egg-dumping by female Red-breasted Mergansers into the nests of other females in the Tern Islands of Kouchibouguac National Park, New Brunswick;

6) Last but certainly not least, Oliver Love, supervised by Drs. Bird and Shutt, handed in for approval his M.Sc. thesis on the adrenocortical response of nestling American Kestrels.

RUBY THROATED HUMMINGBIRD

REVIEWING THE 'RESEARCHER'S TRIPLET' – HYPOTHESES, MODELS AND DATA – IN ECOLOGICAL ANALYSIS

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

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

Acquiring a good working knowledge of statistics is now an integral part of an ecologist's training. As a result, most students and researchers have been exposed to concepts of sampling design (e.g., having an adequate sample size and avoiding pseudoreplication in gathering and analyzing samples), they know the basic meaning of such terms as "null hypothesis", "significance testing", or "Type I and Type II error"3, and they generally know how to perform some basic statistical tests (e.g., t-tests, chi-squared tests, regression, analyses of variance) on their data. But unless one invests considerable time and attention to learning the fundamental notions underlying statistical methods, it is difficult to avoid treating analysis as a sort of automatic data processing step (provide the data, punch this button, and out pops "the answer"). The recent explosion of statistical packages and tests available on every computer often only exacerbates this tendency. Worse, many ecologists view statistics as a necessary evil – something one is forced to do as part of research (especially in order to get a paper published) – and essentially a "black art": mysterious and unfathomable by mere mortals.

As practicing ecologists and researchers, we (the authors) find ourselves grappling every day with statistical analysis – how to select the right tests to use, how to set up data for analysis, how to run the tests and interpret our results. Sometimes we are in a hurry, and have more than once succumbed to the temptation to simply 'mine' the data for answers. Sometimes, we've been stymied trying to decide which test is actually appropriate, and just to get past the analysis bottleneck, we've occasionally defaulted to using some common test procedure without thinking much about the assumptions of the test. Realizing our mistake afterwards, we've often had to backtrack, redo the analysis, and reinterpret the results. Daily experience is teaching us again and again that any thoughtless or mechanical approach to analyzing ecological data leads at best to poor conclusions and at worst to misleading ones. In addition, a recent surge of interest among ecologists in likelihood methods and Bayesian analysis require all of us to understand more deeply what an ecological hypothesis actually is, how to express it clearly enough to design a successful

A BRIEF GLOSSARY OF STATISTICAL TERMS

Sources: Edwards (1972); Krebs (1989); Scheiner and Gurevitch (1993); Sokal and Rolf (1995)

Bayesian analysis – methods of making statistical inferences (conclusions) from data using probability models that use Bayes' theorem to explicitly account for uncertainties in the inferences.

goodness of fit – a measure of how well the observed distribution of data values agrees with an expected distribution specified according to a hypothesis. That is, goodness-of-fit measures how far statistics estimated from the observed sample of data depart from the theoretical distribution of values given by the probability model and its parameters.

likelihood – a measure of how likely it is that each hypothesis is true, given the observed data. The distinction between probability (see below) and likelihood is that with probabilities the hypothesis is known and the data unknown, while with likelihood, the data are known and the hypotheses unknown.

null hypothesis (Ho) – the null hypothesis is the value attributed to a population parameter that is under question by the analysis. The term "null" is used because the hypothesis states that there is no real difference between the sample you are taking, and the population as a whole (measured by the test statistic). If Ho is true, then the estimate of the test statistic from your sample is assumed to adequately represent the unknown parameter value for the whole population.

The purpose of significance testing (see below) is to test the viability of Ho in the light of the observed data. Depending on the data, the researcher can choose whether or not to reject Ho as a likely possibility. Note that Ho is often the reverse of what the researcher actually expects to be true. The researcher puts forward a Ho to allow the data to contradict it.

Continued on page 10...

study, and how to assess the support for it using the data you collect. In this article we review the role of the 'researcher's triplet' - hypotheses, models, and data - to help ecologists overcome some possible misconceptions about what they actually do when analyzing their data.

Every ecologist is familiar with the central activity of the scientific method - testing hypotheses with data – to achieve the goal of selecting "best" (or most valid) hypotheses, usually by eliminating poor or demonstrably incorrect ones. Any scientific hypothesis is a description of how the world might work. An ecological hypothesis is formed as an ecologist's answer to a problem arising from previous observations about some ecological phenomenon. There may be more than one possible answer to a problem, and so different descriptions of how the world might work may be formed as alternative hypotheses to explain the observations. Researchers confront these alternative hypotheses with the data they collect, using this data to help them choose the "best" description(s) with which to make additional observations or predictions (see Hilborn and Mangel 1997). We determine how well each of the descriptions of the world (the set of hypotheses) fit the observations (the data) using some measure of goodness of fit resulting from an analysis procedure.

In planning research into an ecological problem, ecologists typically devote considerable time and care to thinking about their ecological hypotheses and especially to planning and gathering their data – two essential components of a good scientific study. We must formulate the underlying hypothesis (or hypotheses) in such a way that their consequences (i.e. predicted outcomes) can be quantified and measured. We also must design the study so that the data acquired is adequate to distinguish between the different hypotheses using goodness of fit measures. But, most of us neglect to consider carefully enough the third essential component – the analysis methods – at either the design or any other stage of a study. We implicitly assume that the statistical procedures we ultimately use to assess goodness of fit are somehow separate from the questions we ask and the answers we seek. That is, we think that the correct analysis procedures we end up choosing will be somehow magically "objective" and reliable in their ability to provide us with the evidence we need to "unbiasedly" assess the relative strength of the hypotheses, given the data we have. This is not true. Statistical analyses cannot be fully separated from the hypotheses or the data, even in principle. The questions the researcher asks (the hypotheses) are in part contained within the structure of the statistical analysis itself. So, researchers need to be aware of how their hypotheses become represented in their analyses, in order to increase their ability to draw useful conclusions from their research. We hope to illustrate this idea as follows.

Generally, starting with their initial questions, each researcher explicitly or implicitly develops three related

p-value – the probability of obtaining a value of a statistic (computed from the observed data in a sample) as different or more different than the value of a parameter specified in the null hypothesis Ho. The difference between the statistic and the parameter is called a "test statistic", and its p-value is the probability of observing that test statistic if Ho were true. If the p-value is below the significance level, then the researcher usually rejects Ho.

parameters – are numerical quantities measuring some aspect of an ecological process represented by a probability model, and are usually designated with Greek letters. For example, a mean (m) is a measure of central tendency in a distribution of values. Parameters can also result from mathematical relations between other parameters (for example m1 - m2 described below).

Parameters are rarely directly observable and are usually estimated by statistics calculated from samples. For example, the true population mean of a measurement is not observable in a study unless you measure every member of the population with infinite precision. In this case, the sample mean would be taken as an estimate of the unknown population mean.

probability – a measure of the proportion of times a given observation occurs in a sequence of observations under a set of specified conditions. For example, consider the annual frequency of forest fires that burn in a large forested area. The higher the probability that a forest fire can occur per unit time (e.g., a year), the more frequently you expect to observe fires actually igniting and burning in that forest over a sufficiently lengthy time period of obervations (e.g., a decade or more).

pseudoreplication – is the improper use of statistical inference methods when either some treatment effects are not replicated, or replicates are not statistically independent. If either problem occurs, then sources of error in the estimated statistics are confounded, and unbiased (or true) probabilities to assess the validity of the hypotheses in question using goodness of fit measures cannot be calculated.

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tools in order to make inferences about those questions. The first two of these tools are derived from the underlying ecological hypothesis itself– the idea (or ideas) in which the researcher is fundamentally interested in knowing about. For each possible underlying hypothesis, the researcher specifies a probability or statistical model. This probability model is a mathematical abstraction of a particular underlying ecological hypothesis and it represents the process by which different possible ecological outcomes would arise if that process was truly at work. There are a large number of probability models, each giving a distribution of probabilities that possible outcomes could occur (e.g., the normal distribution, chi-square distribution, Poisson distribution, and so on). Even stating that outcomes occur at random (often used as a null hypothesis) is an expression of the simplest possible probability model, where probabilities of possible outcomes are determined by a chance mechanism. Choosing the appropriate probability model depends on the ecological process one is describing, and therefore on the underlying ecological hypothesis. The second tool is closely related to the first – it is the statistical hypothesis (or hypotheses), represented by the values of the statistical parameters needed to generate predicted outcomes from the probability model. Each unknown (but estimatable) parameter (e.g., a mean, or the individual coefficients in a regression) represents an explicit definition of a measurable aspect of the underlying ecological hypothesis. By making estimates of parameter values, each with a definite probability, the researcher can make predictions about possible outcomes using the overall probability model. The third tool is the data, representing those outcomes that were in fact obtained in the study. The researcher makes inferences about the relative strength of each of the alternative ecological hypotheses by examining the outcomes that have occurred (the data) and assessing the evidence that each alternative combination of probability model and its hypothesized parameter values (the statistical hypotheses) could have produced the observed outcomes.

The probability model, the set of statistical hypotheses, and the data, form a triplet that is the foundation of inference (Edwards 1972). Of the many possible predicted outcomes that can occur on the basis of the chosen model, each with a specified probability given the statistical hypothesis, one outcome has actually occurred – the data. In fact, the data is all we know with certainty. We don't know (and never can completely know) whether each underlying ecological hypothesis (now jointly represented by the probability model and the statistical hypothesis) is true. However, by thoughtfully comparing the predicted outcomes to the data, we can tell how likely the hypothesis is to be able to account for that data. Deciding what the data can reveal about the underlying ecological hypotheses is the critical task of the ecological researcher.

Notice how intimately the underlying ecological hypotheses remain connected to the analysis and to the inferences

significance testing – involves deciding what level or amount of error or deviation from the distribution of expected values you will accept before Ho will be rejected. Significance levels are stated either as percentages or probabilities. Common probability values are 0.05, 0.01, or 0.001. The researcher chooses what level of error is acceptable for the study, depending on his knowledge of the organism/ecosystem. A value of p greater than the chosen level would render the value not statistically distinguishable from that predicted by the hypothesis in question (usually Ho). That is, the researcher assumes the observed values could have been obtained if the ecological process operates according to Ho.

statistical hypothesis – the assumed values for unknown parameters for a statistical (probability) model that represent a measurable aspect of the scientific hypothesis in question. Assessing support provided by the data for the hypothesized values of these parameters is usually the focus of a statistical analysis.

statistical model – a representation of how values of particular interest in testing a hypothesis are distributed (e.g., how frequently each value occurs in the population of values). For example, a normal probability model specifies a distribution of values that appears "bell-shaped". Useful results from statistical models are usually expressed in terms of probability – thus they are also called probability models.

statistics – in the broadest sense, the word "statistics" refers to a range of techniques and methods for analyzing and interpreting data, displaying data, and making decisions based on data. A more specific definition of "statistics" is a numerical quantity (such as the mean) calculated using a sample. Such calculated statistics are used to make estimates of unknown parameter values.

test – we test support for a hypothesis statistically by examining how the data are distributed, making decisions about whether the data are similar to those we expect from chosen probability models and its parameters, or not (see significance testing). If we

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drawn – they themselves become completely represented within the structure of the analysis. This is one reason why it is so critical to be aware of the assumptions behind a statistical analysis. A simple definition of "assumption" would be 'something you take for granted'. In this case, we mean that by choosing a particular probability model to represent a hypothesis (for example, a normal distribution model), you assume the distribution of measurements predicted by the probability model will be like those specified by the ecological hypothesis. The statistical models (the probability model and statistical hypotheses) you choose must adequately reflect the ecological conditions and processes specified by the alternative hypotheses being compared, in order that the data can truly help the researcher distinguish between the ecological hypotheses.

In a subsequent article, we look at an example problem taken from a recent research project conducted by one of the authors (SJM) to illustrate how researchers apply this triplet of tools when carrying out a research study.

REFERENCES

Edwards, A.W.F. 1972. Likelihood. Cambridge University Press.

Hilborn R., and M. Mangel. 1997. The Ecological Detective. Monographs in Population Biology, 28. Princeton University Press: Princeton, New Jersey, USA.

Krebs, C. J.1989. Ecological Methodology. Harper Collins Publishers, Inc: New York, NY, USA.

Scheiner, S.M., and J. Gurevitch (editors). 1993. Design and analysis of ecological experiments. Chapman & Hall: New York, NY, USA.

Sokal, R.R. and F.J. Rolf. 1995. Biometry: the principles and practice of statistics in biological research (2nd ed.). Freeman: New York, NY, USA.

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conclude that they are, we accept (do not reject) the hypothesis in question (Ho). If not, we may decide in favour of another hypothesis (H1 or HA).

For example, consider a researcher interested in whether annual survival rate of adults in a species of neotropical migrants depends on whether they nest in small patches of forest or in large unbroken tracts of forest. The null hypothesis Ho is that m1 - m2 = 0 where m1 is the survival rate in small forest patches and m2 is the survival rate in large tracts of forest. Thus Ho concerns the parameter m1 - m2 and the null hypothesis is that the parameter equals zero.

Type I and II error – two possible types of decision errors made in interpreting significance tests. A null hypothesis Ho that is actually true can be incorrectly rejected by the researcher (Type I error), or a false Ho can fail to be rejected by the researcher (Type II error). Type II errors are only errors in the sense that an opportunity to reject Ho correctly has been lost. These two types of errors are defined in the table below.

Researcher's Decision	True state of null hypothesis Ho	
	Ho is true	Ho is false
Ho is rejected	Type I error	Correct
Ho is not rejected	Correct	Type II error

These two types of errors differ in their importance to researchers when making inferences, depending on the goals of their research. Amongst ecologists interested in looking for patterns and building theories, a greater tolerance for Type I errors is often accepted. When testing theories, a more conservative approach (i.e. be less likely to reject Ho) may be required, and a greater tolerance for Type II errors can be accepted.

RUDDY TURNSTONE IN BERMUDA

Falk Huettmann: falk@ucalgary.ca

(Falk says he is a poor World Birder, but he is trying. He will go down in the annals of UNB as their best travelled graduate student. We have no idea what his life-list totals.)

Cocker, M. 2001. Birders: Tales of a Tribe. Jonathan Cape, London. 230 pages. ISBN 9 780224 060028. 15.99 Pounds (US$ 25) Hardcover. Published by Random House.

"The great sadness of modern bird culture is that serious academic ornithology has lost its mooring amongst the legions of gifted amateurs". This excellent book is devoted to exactly these 'amateurs': non-unionized, super-devoted and obsessed with 'birds'. Birding appeals to the boyhood/girlhood soldier present in us all. People still tend to laugh at the "note-taking nerd with the anorak and binoculars", but birding is mostly a private exercise, not really a social one; birders literally die to see rare birds. To the outsider it seems weird what humans do to get accepted among their peers: they fly and drive long distances, miss work or family events, and pay thousands of dollars just to add a new bird species to their 'life list'. Cocker introduces us to the anthropological aspects of these people which fit the statement "... the countries he's covered birding extensively include China, India, Japan, Malaysia (six times), Myanamar, Pakistan, Phillipines, Sabah, Sikkim, Taiwan, Thailand (eleven times), Tibet, and Vietnam (nine times)". In the US, 'twitchers' (another term for obsessed birders) fly easily from coast to coast just to see a rare bird. As Cocker brilliantly describes in his book: birders seem to have an apparent lack of concern to reach the ordinary goals of human life. Birders will go to whatever length it takes in order to see rare birds; an example is Cocker's colleague who died birding for the 'Satyr Tragopan' in Nepal.

Mark Cocker, the author of other fascinating bird books like 'Richard Meinertzhagen' shows us in his brilliantly written text alternatives to the modern world of financial pressures and daily routine. He not only provides us with a beautiful overview of birds, their plumages, and their biology, but gives us a book about time, passion and foremost: not giving in to the pressures of money. "The life list is seen as merely a triumph over time, distance and financial limitation. Reputation, by contrast, is something money can't buy". Perhaps that is why Cocker talks about the "therapeutic effects of birding": birding is indeed self-pleasuring. The reader will appreciate that this book has several nice sections and phrases about religion (e.g. 'the bird god'), which fit exactly into the context of the Birding Tribe.

"Bird-watchers are tense, competitive, selfish, shifty, dishonest, distrusting, boorish, arrogant, pedantic, unsentimental, and above all envious". Notably, the presence of teachers among birders is drastically high. However, Cocker states that birders should be seen, and view themselves, as heterogenous, pluralistic and multi-facetted. UK birders come mostly from the worker and middle-class. Although they have no distinctive classes within their tribe they are still strongly hierarchical in their behaviours. Birders love rituals and they are religiously attached to the tools of their profession: notebooks and

their 'optical harem' (binoculars, tripods and telescopes). Stories, as well as gossip, are essential to the identity of the birding culture. Cocker describes several major subclasses of birders: scientists, ornithologists, birdwatchers and birders. He superbly depicts the typical 'Bird Club Secretary' as the much-loved local bank manager. Drawing from his birding experience world-wide, the author shows what typical bird people do: watch their local patch, send in their records, write articles on identification or little notes on behaviour, sitting on committees or bird societies, update membership databases and rattling money for conservation charities.

Britain has only about 230 bird species to 'tick', whereas Peru and Equador have over 1,700 each, so in addition to chapters on local and national birding issues in UK and elsewhere, 'World Birding' is described in depth too. World Birding is actually nothing new: British birders have gone abroad for over two centuries visiting parts of the British Commonwealth. Covering at least half the planet, people like R. Monreau, A. Thorburn, A. Wallace and many others have played a major role in the development of ornithology, often benefitting museums and conservation as well. Obviously, birding is an English habit, if not an obsession. The following statement from the book is a funny representation of this fact: the Falkland war was important as it saved Falkland seabird colonies from the Argentinians! Even the ownership of the Shetlands and their fast oil money contributed to the cult or life-style of World Birding. World Birding seems to favour people who can earn quickly, if not aggressively, much money, which is somewhat in contrast to classical local domestic birding, e.g. the traditional game warden type. Some hints are given in the book that serious birding can actually be anti-environmental, illustrated by suggestions of diseases and dogs. Curious military staff are commonly reported as the main enemies for successful 'Power Birding' trips all over the world.

Additional sections of the book describe the history of 'twitching' and what birding was like in times of no email and even without (coloured) bird identification books. Slow communications among birders about rare birds meant that only long-staying rarities could be 'ticked'. With the advent of the Internet/WWW, many more rare birds are being located, affecting the number of submissions entering 'rare bird databases'. Already one Golden-winged Warbler alone attracted 3000 birders in the UK on subsequent days. When the Pallas Sandgrouse was seen in UK, minutes later it was announced on the 'BirdLine' and attracted huge crowds. The 'sport' of birding has gone nuts - from 200 rare birds per year to 2500 rare bird submissions. This makes much more work because valid rare bird sightings need to be documented, and then approved and accepted by the British Birds Rarities Committee and British Ornithologists' Union Records Committee (precious contact addresses given in the end of the book).

Birders are obsessed with note-taking and numbers, even when statistically meaningless, for instance, when encounter probabilities, survey effort and overall population size of the birds are unknown. However, despite the constant mentioning of historical birding events (note the 62'Houbara, or the 66'Thrasher), the importance of data amassed by birders gets never mentioned in this book. A rare bird database provided by birders, all collected with the same protocols and available to everyone and with no ownership issues, would be a great service to the interested public, naturalists and beyond.

The locally or nationally rare bird is the 'leitmotif'. In all honesty, it is easier, cheaper, and better to see the bird in its native (tropical) etc. environment rather than a rare transient in a unusual habitat and transient plumage. But only the latter type of these sightings count in the local community.

By now, everyone should realize that this book actually deals with human issues, and that the birds are only a side-aspect - also called an 'excuse' by cynical people - for a certain type of human being. Nevertheless, Cocker leads birders out of this misery by putting their activities into the context of life, and by showing how other birders deal with questions like: "time for birding", "did you ever work" or "where did the money come from for all the birding trips?". Reporting on famous birders such as Richard Richardson and Peter Grant is of huge interest to people who are constantly faced with arguing about their prime 'hobby' (the great Ted Parker, also called the 'Magic Johnson' of the Birding World, is unfortunately not mentioned in this book). For a birder, his relationship with his job is normally less problematic than with his spouse (or parents).

The author provides the reader with detailed insider views and terms like a 'dip' (the birder's term which describes the associated crash in spirits when you fail to find the rare bird), 'blockers' (a bird that a few have seen but most haven't), and 'long-stayers' (birds that hang around for weeks or longer). Cocker also elaborates on members of the tribe who cheat, 'stringers': those who make up species and lose membership in the group.

This is a well-written book and an enjoyable read. The overall conservation message could be stronger. Obviously, true birding has nothing to do really with conservation action or with 'enjoying birds' anyway: it is to have the species 'ticked', that's all. Such bird watching equals stamp collecting. The author, like many other birders, makes the wrong assumption that bird identification work in the field can contribute to specific population estimates. I also disagree with Cocker's statement "The (rare) bird itself is a disoriented vagrant which has no value in any wider ecological context", since many 'rare' birds are normally part of an (overlooked) 'eruption wave' or of a specific migration event; none of which are well described, researched, or even understood. One of the ultimate rare-bird sightings might be the likely-extinct Ivory-billed Woodpecker, and birders could contribute greatly by re-sighting this 'rare' species in the wild. (However, according to this book, hell might break loose among the world's birders if this species were ever confirmed.) Finally, and as a suggestion for a book update, it would be great to include photos so that the reader actually can see how dull most of these rare objects of obsession really are.

With his excellent book Mark Cocker has done a great service to birders, to anthropologists, to the general public and certainly to all the beloved and eccentric birds of a feather.

GREATER SHEARWATER

CANADIAN BIRD-RELATED THESIS ABSTRACTS

Heath, J. P. 2001. Factors influencing breeding distributions of Harlequin Ducks *Histrionicus histrionicus* in northern Labrador: a multi-scale approach. MSc. Thesis. Interdisciplinary Biopsychology Programme, Depts. of Biology and Psychology, Memorial University of Newfoundland, St. John's NF.

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Considerations of spatial and temporal scales are important for understanding the distribution of highly mobile migratory birds, because habitat selection can involve hierarchical processes from the landscape to nest site scale. The aim of this thesis was to evaluate the importance of predation, intraspecific competition, biophysical habitat features and prey abundance in determining the distribution of breeding Harlequin Ducks *Histrionicus histrionicus* in northern Labrador. This was assessed at several spatial scales, both within and among years.

Results indicate source-sink metapopulation structure at the landscape scale, with glacially carved river canyons containing sub-populations. Availability of cliff nesting habitat and, subsequently, abundance of birds of prey is a likely mechanism determining demographic differences among sub-populations of Harlequin Ducks along the source-sink gradient. Habitat and prey availability did not differ among source and sink populations, suggesting birds of prey may limit Harlequin Ducks from otherwise suitable habitat. A spatially explicit Geographical Information System (GIS) model supported these results, indicating spatial segregation of Harlequin Ducks and birds of prey at the landscape scale. Spatial segregation also was found at the home range scale within local populations where intermediate densities of both taxa were present. A variety of biophysical features and prey availability were important for home range selection within source populations. Tradeoffs among habitat quality and predation risk were important in sink and intermediate populations.

These results provide empirical support for aspects of several theoretical areas, including application of a metapopulation framework to migratory birds, coexistence of predators and prey through spatial dynamics, spatial and landscape influences on population dynamics and demographics, and the importance of considering multiple spatial and temporal scales in ecological research.

Results also will be important for conservation and management of Harlequin Ducks, a species at risk in eastern North America, particularly for identifying key spatial areas in which to focus conservation efforts.

Darczewska, M. 1999. Peer attraction in white Peking ducklings, *Anas Platyrhynchos*. MSc. Thesis, Dept. of Psychology, University of Manitoba Library.

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Parent-offspring relationships have been studied much more than the relationships among siblings in precocial birds (those that are highly developed upon hatching). It is suggested that the attraction to siblings and unrelated peers in precocial birds is not of the same sort as the rapid attachment to a parental figure that has been called filial imprinting.

The present experiments investigated the development of individual and species recognition and the significance of brood size in white Peking ducklings.

The ducklings were reared singly or in pairs and they were tested under a simultaneous choice condition, across seven days of age, for a preference for 1) a peer (same-age ducking) versus an inanimate object (a pyramid), 2) a peer versus a different-species bird (a domestic chick) of the same age, 3) a single unfamiliar peer versus a conspecific brood of 10 ducklings, 4) a familiar peer versus an unfamiliar conspecific brood of 10, and 5) a familiar peer versus a brood of 10 chicks. The results were analyzed using a paired-samples t-test for each hypothesis stated and a trend analysis for age effects. The ducklings demonstrated a strong preference for 1) a peer over a pyramid, 2) a duckling over a chick, 3) a brood over a single peer, 4) a brood of ducklings over a familiar peer, with increasing attraction to the familiar peer over days, and 5) a familiar peer over a brood of chicks.

These results indicate the importance of siblings and unrelated peers for white Peking ducklings. The significance of these results is discussed.

INFORMATION ABOUT SCO/SOC FOR NEW MEMBERS

The Society of Canadian Ornithologists had a modest beginning, going back to about 1980, when several ornithologists felt that it was appropriate and timely to have a national ornithological society in Canada. This need became more obvious when Canada's bid to host the 19th International Ornithological Congress (1986) was accepted in 1982. This major ornithological event provided the necessary catalyst for mobilizing Canadian ornithologists. The Society was informally structured prior to the Congress and became involved in various facets of the organization of this large and successful meeting.

Incorporated as a non-profit charitable organization in 1988, the Society is now active in several aspects of Canadian and world ornithology; its major purpose is to contribute to the progress of knowledge on Canadian birds, birds which breed here, and their conservation.

Currently the membership includes 320 professional and amateur ornithologists, students, institutions, and clubs. See back cover of *Picoides* for membership information.

Roles and Objectives of the Society:

The primary role is to encourage the study of birds as an important step toward the conservation and public appreciation of birds. The SCO/SOC advocates communication among those who study birds and those who wish to know more about them through a newsletter and meetings. This would include amateurs, academics, conservationists, private sector biologists, and government biologists. The Society offers grants to study birds in Canada to individuals or groups, particularly those without access to other funds. It recognizes and publicizes significant contributions to bird studies in Canada and honours advances to educate the public as to the value of bird studies and their role in science, conservation, and public enjoyment.

Bulletin and Annual Meeting:

The Society newsletter, *Picoides*, is now published three times a year, in October, February, and June. It welcomes articles about the scientific study of birds, reports from

GULL ROCK NEAR MACHIAS SEAL IS., BAY OF FUNDY

various researchers and students across the country, Canadian Masters and Doctoral thesis abstracts on bird-related topics, government initiatives relevant to bird research and conservation, new book reviews, and reports of up-coming events. The annual meeting is held in conjunction with an annual conference on bird research, either in Canada, or in partnership with other national conferences on birds. The members are asked to approve the Treasurer's yearly report, hear a summary from the President on the state of the Society, and hear and discuss reports from councillors. Members to council are elected from every province. All officers, councillors, and bulletin editor volunteer their time and efforts. Discussions are underway to create a Journal for the publication of research articles on birds.

Awards:

The SCO/SOC recognizes outstanding achievements and encourages study on birds by the awarding of the following awards:

1. The Doris Huestis Speirs Award for contributions to Canadian ornithology, an annual award consisting of a framed photograph and a citation.

2. Taverner Research Awards (2) honouring P.A. Taverner, of $500 each, aimed at amateurs, students, or others, who undertake studies on birds in Canada.

3. The James L. Baillie Student Award of $1000, financed by the Baillie Birdathon of Bird Studies Canada, to support a student who is researching birds at a Canadian university, for their preservation, conservation, or increased knowledge.

4. The Fred Cooke Award of $1000, just recently created, see details in this issue. It honours the contributions of Professor Fred Cooke to Canadian ornithology by supporting ornithological conference travel or research activities by a student at a Canadian university. It is open to any student conducting ornithological research at a Canadian university, except those who are previous recipients of the Award.

POETRY CORNER

COMMON YELLOWTHROAT

The Maryland Yellowthroat – *Henry Van Dyke c. 1895*

While May bedecks the naked trees
With tassels and embroideries,
And many blue-eyed violets beam
Along the edges of the stream,
I hear a voice that seems to say,
Now near at hand, now far away,
"Witchery, witchery, witchery…"

Society of Canadian Ornithologists/Société des Ornithologistes du Canada

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, Département de biologie, Université de Moncton, Moncton, NB. E1A 3E9.
Tél: 506-858-4334 (direct: 4292); Fax: 506-858-4541; Email: villarm@umoncton.ca

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.
Four awards: James L. Baillie 1K$, Taverner (2 awards) 0.5K$, Cooke Award 1K$.
Kevin Teather (chair)#

Meetings Committee
Kathy Martin (chair)#, Jean-Pierre Savard #, Greg Robertson #, Cheri Gratto-Trevor #, Fred Cooke (AOU liaison, ex officio)#

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Student Presentations Committee
Greg Robertson #

EASTERN BLUEBIRD

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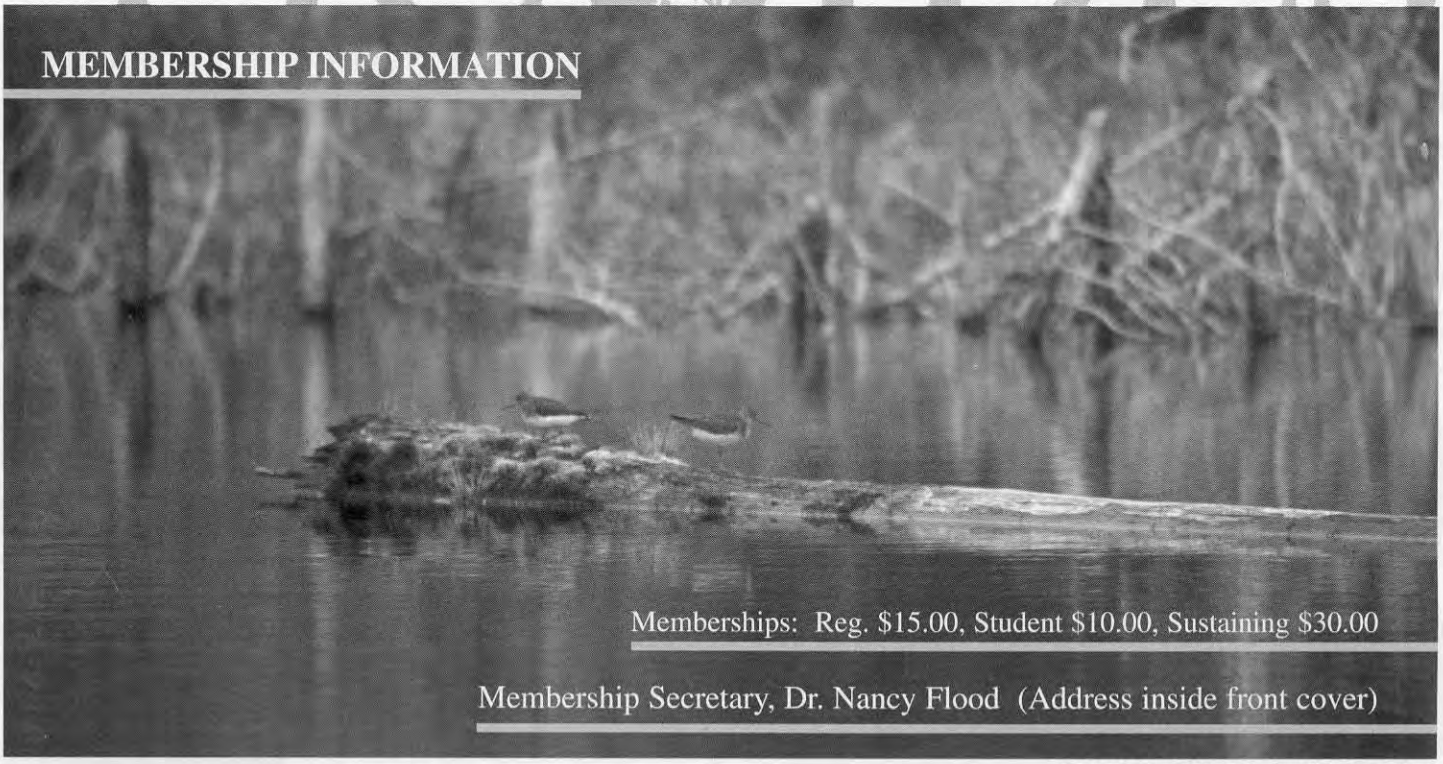

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Membership Secretary, Dr. Nancy Flood (Address inside front cover)

SOLITARY SANDPIPERS AT A BEAVER POND

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