



Instructions for Authors

updated June 2016

The Auk: Ornithological Advances

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The Condor: Ornithological Applications

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The Auk: Ornithological Advances and *The Condor: Ornithological Applications* are published by the American Ornithologists' Union (AOU) and the Cooper Ornithological Society (COS). The journals are managed by the Central Ornithology Publication Office (COPO) of the Societies. Send inquiries about the suitability of an article topic for *The Auk* or *The Condor* and other publication questions to aoucospubs@gmail.com. The Journals publish original material that has not been published elsewhere.

PREPARING YOUR MANUSCRIPT

1. Choose the Journal.

The Auk: Ornithological Advances is an international, peer-reviewed journal that publishes original research and scholarship advancing the fundamental scientific knowledge of bird species and of broad biological concepts (e.g., ecology, evolution, behavior, physiology, genetics) through studies of bird species. *Auk* articles often introduce or employ innovative empirical and theoretical approaches and analyses.

The Condor: Ornithological Applications publishes original research and scholarship in peer-reviewed articles that address ornithological applications in two ways: the application of scientific theory and methods to the conservation, management, and ecology of birds; and the application of ornithological knowledge to conservation and management policy and other issues of importance to society. *The Condor* aims to reach research ornithologists and practitioners.

The Auk: Ornithological Advances

Mark E. Hauber, Editor-in-Chief
mark.hauber@hunter.cuny.edu

Evolutionary history and paleontology
Systematics and nomenclature
Behavioral ecology
Foraging strategies and tactics
Population biology and ecology
Molecular ecology
Community and landscape ecology
Migration and orientation
Spacing patterns and habitat use
Genetics and genomics
Epigenetics, and evolutionary development
Physiology and biochemistry
Morphology and anatomy
Integrative and cross-disciplinary studies
Theoretical and methodological advances
Thematic reviews and opinion pieces

The Condor: Ornithological Applications

Philip C Stouffer, Editor-in-Chief
pstouffer@lsu.edu

Population biology, including threats to bird populations
Conservation genetics
Community and landscape ecology
Ecosystem-level influences of birds
Effects of habitat alteration and fragmentation
Avian responses to climate change
Anthropogenic effects on genetics, behavior, or physiological processes
Biology of avian diseases and disease transmission by birds
Birds in urban or agricultural settings
Sociological and economic studies related to birds or the discipline of ornithology
Integrative and cross-disciplinary studies
Theoretical and methodological advances in practice
Evaluations of science relevant to issues in conservation and management
Thematic reviews and opinion pieces

2. Choose the Article Type.

Choose either Research Article or Correction in the online submission system.

Research Articles. All manuscripts should be submitted as Research Articles (except Corrections). For manuscripts that might appear in special sections, such as Perspectives, Commentaries, Reviews, and Letters to the Editor, please contact the Editor-in-Chief first at aoucospubs.org, then upload your submission as a Research Article, with the article type written on the title page. Abstracts are required for all Perspectives, Commentaries, and Reviews, as well as for Research Articles.

Review papers summarize research and are a synthesis of existing data, with the promise of having a broad influence on the ornithological community. Please discuss with the Editor-in-Chief before submission, and when submitting put the word Review at the top of the Word file.

Commentaries are brief papers that comment on articles previously published or opinion pieces on some aspect of ornithology (especially the process or application of ornithology), or a reconsideration of a topic in ornithology without extensive review. Authors of Research Articles, Review Papers, or Perspectives will typically be given the opportunity to respond to a Commentary on their published work. Authors of Commentaries will not typically be offered this opportunity. When submitting, put the word Commentary at the top of the Word file.

Perspectives are papers that accompany an article (of any type) published at the same time. They are invited by the Editor-in-Chief. When submitting, put the word Perspective at the top of the Word file.

Editorials are written by Editors and occasionally by Guest Editors chosen by the Editor-in-Chief.

Book Reviews. Submit to the Book Review Editor Jay Mager at j-mager@onu.edu, not through the online submission system.

Memorials. Submit to the Memorials Editor, Ted Anderson, ted020@centurytel.net, not through the online submission system. See Memorials guidelines under **Memorials** in the **STYLE GUIDE** below.

3. Submission Information. You will be asked questions about funding, ethics protocols, and author contributions (which will be put in the Acknowledgments section of your paper). Please describe each author's contributions by putting author initials next to the categories listed below. Not all categories need be used. These categories are not meant to prescribe authorship, but to be descriptive of the stated authors' contributions. Broad areas of **Author Contributions**:

1. Conceived the idea, design, experiment (supervised research, formulated question or hypothesis)
2. Performed the experiments (collected data, conducted the research)
3. Wrote the paper (or substantially edited the paper)
4. Developed or designed methods
5. Analyzed the data
6. Contributed substantial materials, resources, or funding. (Smaller resource contributions and people who are not authors of the paper can be listed in the general Acknowledgments section text.)

4. Supplemental Data and Materials. Upload supplemental files at the time of article submission online. Supplemental material may include original and derived datasets, source code for simulation models, multimedia files (such as sound files, videos) and details about and software for unusual statistical analyses. Supplemental materials should not include details about methods, results, or additional essential figures; any such content should be incorporated into the manuscript as text, tables, or figures, or even an Appendix. Please name and cite all supplementary files this way: Supplemental Material Appendix A or Supplemental Material Table S1 or Supplemental Material Figure S1. Combine supplemental material into one file when possible. Smaller items of supplemental material will be moved to the manuscript itself (for instance tables and figures that can each fit on an 8.5 x 11 inch page) and placed in an Appendix at the end of the paper. Supplemental Material is reserved for large files and audio and video files only.

Data deposits. Authors are encouraged to deposit data in public repositories, when appropriate, such as at the Dryad Digital Repository, datadryad.org.



5. English. Authors whose native language is not English are encouraged to enlist the aid of a native English speaker to review the manuscript for clarity and correct usage. Manuscripts that do not meet linguistic standards may be returned without review.

6. Format your Manuscript.

Page limit is 25,000 words (about 70 pages when double-spaced with 12 pt. Times New Roman type).

Double-space all text, including figure captions and literature cited, using 12-pt. Times New Roman or similar typeface.

Margins should be 1 inch all around, on pages of 8.5 by 11 inch size. Do not justify the right margin (choose left-justified, not full-justified). Do not include line numbers, headers, or footers. Insert page numbering.

Order the sections of your manuscript in this way: Title page, Abstract with Keywords, Foreign Language Abstract with

Keywords (if you are providing it yourself), Introduction, Methods, Results, Discussion, Acknowledgments, Literature Cited, Figure Captions, Appendix, and Tables go at the very end of your Word file. If you have a Conclusion section, list it as a subheading within the Discussion section. Tables and Figures may be in separate files. Supplemental data should be included in the paper where possible, except when too large such as computer code or large spreadsheets.

Figure guidelines. Figure captions should be listed at the end of the manuscript. Resolution should be 600 dpi for illustrations and 1200 dpi for line art. Put figure numbers on each figure file (they will be cropped out). For a one-column figure the width is 3.5" and for a two-column figure the width is 7". Cite each figure in the text in numerical order (except for Appendix figures, see below). Spell out the word Figure in citations and figure captions (Figure 1, Figures 2 and 3, Figure 1A, 1B). Figure citations from another work should use the word "figure" with lowercase "f" such as (figure 2 in Smith 1980). Figures should be simple and easily comprehended without reference to the manuscript text. Once accepted, a paper's figures must be submitted as high-resolution figures of 600 dpi in .tif, .eps, or .pdf formats. Figure captions should not repeat information already presented in text or tables. Use capital letters for figure parts in the figure caption: (A), (B), etc. Bold the letters but not the parentheses. For sound spectrograms (sonograms), use the actual tracing if it is sharp, clear, and relatively short. If intensity differences are not important, then submit a high-contrast digital image that meets the above specifications. Label all axes, use sentence case labels (only the first word is capitalized unless it is a proper noun). You can group related illustrations as panels into a single figure file (Figure 1 would include 1A, 1B, 1C, 1D) so that they can be placed together on the same page/screen. Mark each section of the figure A, B, C. If necessary, you may submit each part of a figure as a separate file as long as it is clear how to combine the parts into one figure for publication. When mixing figure citations in the text of your manuscript with reference citations, use a semicolon: (Figure 1, Figure 2A and 2B; Jones and Johnson 1978). Appendix figure numbering should follow from the figure numbers in the rest of the manuscript. So the first figure in Appendix A may be Figure 5. It should be cited as "Figure 5 in Appendix A", or "Appendix A Figure 5".

Table guidelines. See Table guidelines in the STYLE GUIDE below under **Tables**.

File formats. For the manuscript: Word (.doc or .docx), WordPerfect (.wpd), Rich-text format (.rft), or LaTeX (.tex). For tables: Word (.doc or .docx), Excel (.xls or .csv), or Turbo (.tds). For figures and images: .doc, .jpeg, .tif, .gif, .eps, or .ppt. Final figures will need to be in .tif, .eps, or .pdf format. For supplemental data: .doc, .html, .mpeg, .xls, source code, .zip. For video files: Quicktime, MPEG, and AVI. For Audio files: MP3, AAC, and WMA.

See the **ORNITHOLOGY STYLE SHEET** and **SAMPLE ARTICLE FORMAT** for additional style items including formats for author byline, footnotes, tables, references, and for scientific terminology. For items not in the **STYLE SHEET**, see *Scientific Style and Format: The CBE Manual for Authors, Editors, and Publishers*, Fifth, Sixth, or Seventh Editions and the *Merriam-Webster Collegiate Dictionary*.

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ORNITHOLOGY STYLE SHEET

a priori and a posteriori. Not italicized because they are in the English dictionary.

Abbreviations. Minimize the use of nonstandard abbreviations or acronyms that readers must memorize to follow your paper. Spell out any abbreviations at first usage with the abbreviation in parentheses.

About. Use ~before numbers instead of “about”: ~90%, not about 90%.

Acknowledgments. List your funding sources in the Acknowledgments section. If authors want to mention themselves, initials are sufficient: K.W.H. would like to thank.... Editor names and reviewer names are not appropriate in this section and do not need to be thanked.

Abstract. Maximum word count is 300. Avoid long lists of common methods or discursive explanations of what you set out to accomplish. Abstracts should provide a brief summary of the research, including the purpose, methods, results, and major conclusions. Do not include citations in the Abstract. Authors are encouraged to submit a technically competent foreign language abstract, or else the Journal will provide one in Spanish, Portuguese, or French. When you submit your paper, you are asked which of the three languages you would like your Abstract translated into. Choose Other if you are submitting an abstract in a language other than those three.

Affiliation. See Author names.

And/or. May be used where appropriate.

Antarctic. Capitalized.

APPENDIX section. If more than one appendix, label APPENDIX A, APPENDIX B. Tables within appendices should follow the numbering of other tables in the paper. So an appendix table citation in the text might be: “Table 5 in the Appendix”.

Approximately. Use ~before numbers instead of approximately: ~90%, not approximately 90%.

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Author contributions are required in the Acknowledgments section. Put author names next to the categories listed below. Not all categories need be used. These categories are not meant to prescribe authorship, but to describe the contributions of the stated authors. Broad areas of author contributions can include:

1. Conceived the idea, design, experiment (supervised research, formulated question or hypothesis)
2. Performed the experiments (collected data, conducted the research)
3. Wrote the paper (or substantially edited the paper)
4. Developed or designed methods
5. Analyzed the data
6. Contributed substantial materials, resources, or funding. (Smaller resource contributions and people who are not authors of the paper can be listed in the general Acknowledgments section text.)

Author names in the byline. List authors with superscripted numbers to indicate affiliations *at the time the research was conducted*. List institutional affiliations under the authors’ names. Include the email address of the corresponding author with an asterisk before it, and put an asterisk after the author’s name in the byline after the last affiliation superscripted number. Do not superscript the asterisk (an asterisk is already a superscript). Above the corresponding author email address, include any other footnotes such as [#] These authors contributed equally to the paper. [†] This author is deceased. * The corresponding author information is placed last. Individuals listed as authors should have played a significant role in designing or carrying out the research, writing the manuscript, or providing extensive guidance on the execution of the project. Those individuals whose role was limited to providing materials, financial support, or review should be recognized in the general Acknowledgments section not on the Author Byline.

Biogeographical realms. These regions are capitalized: Neotropic and Neotropical, Antarctic, Arctic, Holarctic, Palearctic, and Nearctic.

Bonferroni correction. (not Bonferroni Correction)

Boolean. (not boolean)

Capitalization. Proper names: Hairy, Downy, and Ivory-billed woodpeckers (when multiple groups are named together). Hairy Woodpecker. Downy Woodpecker. Ivory-billed Woodpecker. (when named alone) Mississippi and Missouri rivers. (when named together) Mississippi River. (when named alone). Lakes Erie and Superior.

chi-square. (not Chi-square)

Citation order. Lists of Literature Cited citations within the text of the manuscript should be in chronological order.

Company names and commercial product names. Use this style for products, companies, and company location: Predation MP3 Game Caller (Western Rivers, Lexington, Tennessee, USA). No trademark or registered trademark symbols. No Inc. or Co. of Ltd. Or GmbH, etc., on the company name.

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Data. This is a plural noun, carrying a plural verb: Data were too few to assess significance.

Dataset. Dataset is one word.

Dates. Use American dating (September 29, 1992).

Day of the year. Refer to the ordinal date (number) 1 to 366. [This is not the Julian date.]

Deceased authors. See **Author names.**

Decimals. No naked decimals except with caliber: .410 shotgun. Otherwise, 0.17. Probability rounded to two decimal places unless $P < 0.01$, in which case round to three decimal places; use $P < 0.001$ as the smallest P -value.

DISCUSSION section. It is useful to start the Discussion with a statement that summarizes the main results. The Discussion should develop the significance and importance of the Results and set them into a framework of previous research. The Discussion should follow logically from the Results. Additional statistical tests and results are usually inappropriate here and should be presented in the Results section, except in unusual cases.

Document format. Page size of 8.5 x 11 inch format, double-spaced throughout, one inch margins, left-justified.

doi. doi numbers will be provided by the publisher, doi: 10.1650/CONDOR-16-XXX or doi: 10.1642/AUK-16-xxx

e.g., (for example) takes a comma and is roman.

Email. One word, email.

Ethics statements and guidelines. In the Acknowledgments section, you may state any Ethics guidelines that you followed.

Equations. Center long equations on the page. Indicate where long equations should have a line break. Use MathType to create equations (it is an add-on program to Word). Put spaces around operators such as = , + , etc. Use bold and italics where appropriate for symbols (see **Symbols**).

Footnotes. No footnotes in the text. Put footnote information in the text. Footnotes may be used in tables.

Gene or amino acid sequences. Must be deposited in GenBank or an equivalent repository and the accession numbers reported in Methods.

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Holarctic. Capitalized.

Headings. Main headings such as INTRODUCTION, METHODS, RESULTS, DISCUSSION, ACKNOWLEDGMENTS, LITERATURE CITED, and APPENDIX should be in all caps and flush left and bold. Second-level headings should be flush left and bold in title case (each word capitalized), third-level headings are bold in sentence case (only the first word is capitalized) with a period at the end, run in to the indented paragraph, and fourth-level headings are the same as third-level headings except they are italic instead of bold. Text immediately following an H1 heading or a H2 heading should not be indented.

Hyphens. Do not use one hyphen to imply the rest of a word unless you use the second hyphen as well. For instance, do not use inter- and intrasexual, as they are not parallel. Correct usage would be “inter- and intra-sexual”. To avoid the problem, use intersexual and intrasexual, for instance. Use hyphens only when necessary for meaning.

i.e. (that is) takes no comma after it and is not italicized.

Internet. Internet is capitalized.

INTRODUCTION section. It should provide the aims and significance of the research and place it within the framework of existing work. Limit the use of citations; in general there are a few points that cannot be supported by three or fewer citations. Long lists of citations are seldom required and detract from the readability of the manuscript.

Italics. Limit the extent to which italics are used for emphasis. Foreign words are italicized if they do not appear in the American English dictionary (*Merriam-Webster*, *Merriam-Webster Collegiate*, or *Webster's Third New International Dictionary Unabridged*).

Keywords. 1 to 8 keywords. List after the Abstract. Put the word “Keywords” in italics. Keywords need not be in alphabetical order, but may be in order of importance.

Latin terms. Leave roman if they are in the American English dictionary (*Merriam-Webster*, *Merriam-Webster Collegiate*, or *Webster's Third New International Unabridged*). Latin terms and other non-English words that do not appear in the American English dictionary are to be italicized.

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- Avery, M. L. (1995). Rusty Blackbird (*Euphagus carolinus*). In *The Birds of North America* 200, (F. B. Gill and A. Poole, Editors). Academy of Natural Sciences, Philadelphia, PA, USA, and American Ornithologists' Union, Washington DC, USA. doi:10.2173/bna.599
- Darley, J. A. (1968). The social organization of breeding Brown-headed Cowbirds. Ph.D. dissertation, University of Western Ontario, London, ON, Canada.
- Greenberg, R., C. Elphick, J. Nordby, C. Gjerdrum, H. Spautz, W. G. Shriver, B. Schmeling, B. Olsen, P. Marra, N. Nur, and M. Winter (2006). Flooding and predation: Trade-offs in the nesting ecology of tidal-marsh sparrows. In *Terrestrial Vertebrates of Tidal Marshes: Evolution, Ecology, and Conservation* (R. Greenberg, J. E. Maldonado, S. Droege, and M. V. MacDonald, Editors). *Studies in Avian Biology* 32:96–109.
- Lafferty, K. D., A. P. Dobson, and A. M. Kuris (2006). Parasites dominate food web links. *Proceedings of the National Academy of Sciences USA* 103:11211–11216. National Audubon Society 2010. The Christmas Bird Count historical results. <http://www.christmasbirdcount.org>. [Reprinted]
- Peterson, J. M. C. (1988). Rusty Blackbird, *Euphagus carolinus*. In *The Atlas of Breeding Birds in New York State* (R. F. Andrlle and J. R. Carroll, Editors). Cornell University Press, NY, USA.
- Polačiková, L., F. Takasu, B. G. Stokke, A. Moksnes, E. Røskft, P. Cassey, M. E. Hauber, and T. Grim (2013). Egg arrangement in avian clutches covaries with the rejection of foreign eggs. *Animal Cognition Online* First. doi:10.1007/s1007101306151
- Powell, G. V. N. (1985). Sociobiology and adaptive significance of interspecific foraging flocks in the Neotropics. In *Neotropical Ornithology* (P. A. Buckley, M. S. Foster, E. S. Morton, R. S. Ridgely, and F. G. Buckley, Editors). *Ornithological Monographs* 36.
- Ralph, C. J., G. L. Hunt, Jr., M. G. Raphael, and J. F. Piatt (Editors) (1995). *Ecology and conservation of the Marbled Murrelet*. USDA Forest Service General Technical Report PSW-GTR-152.
- Ringelman, K. M., and M. J. Stupaczuk (2013). Dabbling ducks increase nest defense after partial clutch loss. *The Condor* 115:290-297.
- SAS Institute. 1990. SAS-STAT user's guide. Version 6, 4th edition. SAS Institute, Cary, NC, USA.
- Wilson, S., E. M. Anderson, A. S. G. Wilson, D. F. Bertram, and P. Arcese (2013). Citizen science reveals an extensive shift in the winter distribution of migratory Western Grebes. *PLoS ONE* 8:e65408.

Single authors precede multiple author citations for the same first author, regardless of date. List up to 12 authors (if there are more than 12 authors, then list 11 of them and et al.). Journal names should be spelled out (including the article part of speech). Book titles should be capitalized. For unpublished materials, cite this way in the text: (K. P. Able personal communication). For in press, put "In press." at the end of the reference. If the year is not known, then put the "(In press)" where the year would go, after the authors' names.

Math symbols. If any individual characters cannot be found in Word's Symbol palette ("(normal text)," "Times New Roman," or "Symbol"), please set in MathType.

Set in-text (inline) math in Microsoft Word regular text. Exception: If in-text (inline) math has elements that should be stacked or have rules, circumflexes, arrows, or other accents spanning over more than one character, set in MathType as "Inline Equation."

Set display equations in MathType. Each display equation should be in its own MathType object. Each MathType object should contain the entire equation, including final punctuation. Equation numbers should be set as Microsoft Word regular text, outside the MathType object.

Measurements. Give in SI units. Exception: Use hr for hour instead of h for hour.

Memorials. An In Memoriam essay in *The Auk* or *The Condor* is meant to be a scientific obituary, with only a brief amount of personal information. The typical length is 750–1500 words, with a maximum of 1800 words. Include information about AOU or Cooper Society membership (i.e. Lifetime Membership), honors, awards, and service (such as

officer, board, and committee posts). Do not include a resume, publications list, or course list. Please supply a large, high-resolution photograph of the person (at any age), preferably taken in the field and in color, as a jpeg or tif file. When possible and appropriate, include the following information in your essay:

1. Early life and when and how the person became interested in birds.
2. Formal and informal education; military service.
3. Development of person's areas of scientific interest, and influences.
4. Contributions to scientific ornithology, major research areas, books and important papers written, number of Ph.D. dissertations supervised.
5. Professional life, honors and awards, academic appointments, and volunteer work related to ornithology, including Society contributions.
6. Other professional work, related careers.
7. Personal traits, hobbies, other interests or careers, anecdotes by or about the person.
8. Immediate family, including surviving members.

Send submissions to the In Memoriam Editor, Ted R. Anderson (ted020@centurytel.net).

Meters above sea level. m.a.s.l. Spell out on first mention.

METHODS section. This section should provide enough information for the reader to be able to replicate and critically evaluate the research. Describe statistical tests and procedures. Cite statistical software and analysis programs. End the statistics section with a statement to the effect that the values reported in the Results section are means \pm SE or SD. Then in the Results section simply present the values. Indicate the significance levels of statistical tests. If reporting the results of analyses using the information-theoretic method, describe and justify the a priori hypotheses and models in the candidate set, identify exploratory hypotheses, and state the criterion used to evaluate models, e.g., second-order AIC corrected for small sample sizes (AICc),

AICc differences (Δ_i or ΔAICc), and Akaike weights (w_i). Define terms for information-theoretic analyses (K, Dev, ΔAIC , etc.) on first use in the text and in table captions. In general, follow the suggestions of **Anderson et al. (2001)**, **Suggestions for presenting the results of data analyses, *Journal of Wildlife Management* 65:373–378.**

If you list a product, supply name and location of the manufacturer. Give equipment model numbers. Give full citations for computer software cited.

Millions of years. myr

Million years ago. mya

Nearctic. Capitalized.

Neotropic. Neotropic and Neotropical are capitalized.

Nomenclature. Any proposed new nomenclature in an article will be reviewed by the Working Group on Avian Nomenclature of the International Ornithologists' Union, which promotes stability in scientific names of birds, in accord with the International Code of Zoological Nomenclature. The following sentence will appear in the Acknowledgments: "The nomenclature in this paper has been reviewed by the Working Group on Avian Nomenclature of the International Ornithologists' Union."



Numerals. Use numerals for all numbers except one and zero. Use 0 and 1 when used in measurements or with other numerals in the same sentence (this is from the Council of Science Editors 7th edition). Use commas for numbers with thousands and millions, 5,247. Precede decimal fractions by a zero (0.97, not .97). Do not use slant lines in units of measure; instead, use the exponential form or the word "per" throughout text, tables, and figures (use kJ day^{-1} , not kJ/day).

Open access. No hyphen for either noun or adjective.

P value and p value. Italicize *P* and *p*. Probability rounded to two decimal places unless $P < 0.01$, in which case round to three decimal places; use $P < 0.001$ as the smallest *P* value.

Palearctic. Capitalized.

Predate. Does not mean “to eat”. Use depredate instead.

Pronouns. Avoid the use of pronouns such as “this,” as the referent may not be clear.

Punctuation. Capitalize the first letter after a colon if what follows is a sentence. Use the serial comma.

Quotations. Use quote marks, and include page numbers in the citation if available. For longer quotes: block style, one line space above and below, indented both sides, italics, no quotation marks. For other kinds of block material, roman, indented both sides (or centered, depending on the type of information). Both types of blocked-out material get a line space above and a line space below.

radio-tagged. (not radiotagged, radiomarked, radio-marked). **radio-tag** (verb and noun).

RESULTS section. The Results section should include only results pertinent to the hypotheses or questions raised in the Introduction section and treated in the Discussion section. Use the same number of decimal places for means and SE or SD (e.g., 38.9 ± 1.2 , not 38.9 ± 1.23); usually only one or two decimal places are necessary. Round percentages to whole numbers. The text should not duplicate material presented in tables or figures. The text should make clear the relevant sample sizes, degrees of freedom, values of statistical tests, and *P*-values. Test statistics should be rounded to one (*t*-test, C^2 , *F*, etc.) or two (*r*, r^2 , etc.) decimal places. If reporting the results of analyses using the information-theoretic method, describe and justify the a priori hypotheses and models in the candidate set, identify exploratory hypotheses, and state the criterion used to evaluate models, e.g., second-order AIC corrected for small sample sizes (AICc), AICc differences (Δ_i or ΔAICc), and Akaike weights (*w_i*). Define terms for information-theoretic analyses (*K*, *Dev*, ΔAIC , etc.) on first use in the text and in table captions. When reporting the results of AIC analyses, please follow the advice of Anderson et al. (2001), Suggestions for presenting the results of data analyses, *Journal of Wildlife Management* 65:373–378, except omit the column of AIC values and report only the lowest value of AIC (or AICc, QAICc) in a footnote to the table.

Running head. On the title page, include a shortened title of 8 words or fewer.

Software names. No need to use the word “version or” v.” Use PAUP* 4.0

SORA. *Searchable Ornithological Research Archive*.

Species names. See Taxonomy.

Spelling. Use American English spelling throughout, except for foreign titles in the Literature Cited section.

Statistical symbols.

Italics. *n* (sample size), *P* (probability rounded to two decimal places unless $P < 0.01$, in which case round to three decimal places; use $P < 0.001$ as the smallest *P*-value; $F_{a,b}$ (*F*-ratio with a,b = degrees of freedom; *U* (Mann-Whitney *U*-test), *r* (simple correlation coefficient; Pearson *r*); *z* (Wilcoxon test), r_s (Spearman rank-order correlation), *R* (multiple regression coefficient), *G* (*G*-test), *F*-test, *K* (number of parameters in AIC analyses).

Roman. SD (standard deviation), SE (standard error), χ^2 (chi-square), CV (coefficient of variation), df (degrees of freedom), AICc. Note that all variables are italicized unless they are denoted by a Greek letter, where they are roman. If a variable is denoted by a combination of letters (usually an abbreviation), these too should be roman.

Descriptive statistics. For continuous variables, report three metrics: a measure of central tendency (*x*, median, mode), the number of observations (*n*), and an estimate of variance (standard deviation, standard error, 95% confidence interval, or interquartile range). For frequencies, report the frequency and number of observations (0.76, *n* = 56). When comparing groups, report the relative difference, effect size, or an odds ratio that quantifies the magnitude of the difference. For example: “Mean wing chord of species A (10.0 ± 0.1 cm, *n* = 25) was 25% larger than that of B (12.5 ± 0.2 cm, *n* = 37; two-sample *t*-test: $t_{60} = 57.7$, $P = 0.043$).” Other style examples: 0.27 nests 10 km⁻² (SD = 0.05).

Statistical tests. Authors are encouraged to use the best statistical tools for data analysis, and it is acceptable to present results from frequentist, information-theory, and Bayesian approaches in the same manuscript. Describe procedures used to evaluate fit of the model to the data, such as goodness-of-fit tests, inspection of

residuals, or tests of model assumptions. For results of statistical tests, report the statistical test that was applied (2-sample *t*-test, analysis of covariance), the test statistic (*t*, *U*, *F*, *r*), degrees of freedom as subscripts to the test statistic, and the probability value (*P*). Indicate whether statistical tests were one- or two-tailed, and the α -level that was used to determine significance ($P < 0.05$). Post hoc power tests are discouraged.

Demographic parameters are defined at first mention and notation follows precedents and common usage in the literature: *N* for abundance, ϕ for apparent survival (not φ or Φ), *S* for true survival, *F* for site fidelity, ψ for movement rates, λ for the finite rate of population change, and *p* and *c* for the probabilities of detection (not *P* or ρ). For results of model selection, report the parameter count, the deviance, the statistics used to select candidate models, and model weights (*K*, Dev or $-2\ln L$, ΔQAICc , w_i). The minimum QAICc value and variance inflation factors (\hat{c}) can be reported in footnotes in the Table. In long Tables with many candidate models, models with negligible support can be discarded ($w_i < 0.01$) unless the model is important to the analysis (global starting model).

Fonts for statistical metrics. Report the following metrics in italics: *n* for sample size, *P* for probability values, *G* as the test statistic from a *G*-test, t_a for the test statistic from paired or two sample *t*-test with *a* degrees of freedom, *U* from a Mann-Whitney *U*-test, $F_{a,b}$ as the test statistic from an *F*-ratio with *a*, *b* = numerator and denominator degrees of freedom (degrees of freedom are not italicized), *r* and r_s for Pearson and Spearman correlation coefficients, r^2 for the coefficient of determination, and *K* and w_i for the number of parameters and Akaike weights. Report the following statistical information in normal font, not italics: SD for standard deviation, SE for standard error, CI for confidence interval, CV for coefficient of variation, df for degrees of freedom, ns for nonsignificant, Dev for model deviance, BIC for Bayesian Information Criterion χ_a^2 for chi-square statistics with *a* degrees of freedom, and ANOVA for analysis of variance. Use AICc and QAICc for (quasi) Akaike's Information Criterion. All variables are italicized unless they are denoted by a Greek letter, in which case they are *not* italicized.

Subscripts and superscripts. Use true subscripts and superscripts and do not raise or lower the text.

Supplemental material. Please name and cite all supplemental files with the name Supplemental Material Appendix or Supplemental Material Table S1, etc. Combine supplemental material into one file when possible.

Symbols. < used in a sentence does not take a space around it. There were <10 birds feeding.

Tables. Cite tables within the text in numerical order. Use Arabic numbers, e.g., Table 1. Table title is in sentence case (only the first word of the title starts with a capital letter). Table headings also are sentence case. Tables should be in Word or Excel format. Table citations in parentheses should be separated from literature citations with a semicolon, but can appear together with figure citations: text text text (Table 1 and Figure 1; Jones and Johnson 1978). Keep tables as simple as possible. Orient tables vertically. They should be intelligible without reference to the manuscript text. Do not restate results given in the text. Do not use solid vertical or horizontal lines in tables. Do not include extensive raw tabular material either as tables or appendices: Either upload as Supplemental Material or cite your website. If birds are listed in several tables within the manuscript, scientific names should be given only in one table, the one with the comprehensive species list. The only exception to the phylogenetic order of species is if another logical order of species is used, for example one based on Results.

How to format a table:

- Table data are all in individual cells.
- Table title and footnotes are NOT in cells.
- There are no extra rows or columns or solid horizontal or vertical lines within the table. The only lines should be the natural gridlines between cells.
- Data are not aligned using tabs or spaces. Place all text and data flush left in each cell. Exception: Numbers can be decimal-aligned.
- Column heads spanning multiple columns should be set up using Word's Merge Cell function.
- Table is an editable Word table, created using MS Word's table function.
- **Omit the column of AIC values and report only the lowest value of AIC (or AICc, QAICc) in a footnote to the table.**

Indents: Please note that inserting an em space (by selecting from Word's Special Character list) is the recommended way to maintain levels of indent in a structured stub column. Keyboard spaces, indents, and tab characters will not be recognized by the typesetting software.

SEE SAMPLE TABLE IN SAMPLE ARTICLE FORMAT BELOW.

Taxonomy. For any new taxonomy, see **Nomenclature**. Give the scientific name in parentheses (and in italics) at the first mention of a species both in the Abstract and in the article. Latin species names are always in italics: in the text, in figures and tables, and in the Literature Cited section. Scientific and American English names of birds, and their order of presentation in the manuscript, including figures and tables, should follow:

North America and Middle America: the 7th edition of the *American Ornithologists' Union Checklist of North American Birds* and its Supplements <http://checklist.aou.org/taxa/>

South America: AOU South American Classification Committee Checklist for South American Birds <http://www.museum.lsu.edu/~Remsen/SACCCountryLists.htm>

Outside the Americas: *Avibase Clements Checklist* <http://avibase.bsc-eoc.org/checklist.jsp?lang=EN> or Clements Checklist <http://www.birds.cornell.edu/clementschecklist/download/>

When it is desirable to include other spellings such as Hawaiian names of species, put the Hawaiian name (or other spelling) in parentheses after the first mention of the species. The only exception to the phylogenetic order of species is if another logical order of species is used, for example one based on Results. Alphabetical order of presentation is never acceptable. Do not give subspecific information unless it is pertinent and has been determined to be critical. Throughout the manuscript capitalize English names of bird species (e.g., Red-winged Blackbird) but not bird groups (e.g., blackbirds) or a phrase such as: Red-winged and Tricolored blackbirds. Common names of plants, mammals, etc., should not be capitalized. This rule applies to all references, figures, and tables. Do not refer to birds by four-letter banding codes. For plant taxonomy, use the USDA Plants database, <http://plants.usda.gov/> Always italicize genus names. Do not use the Latin genus name as an adjective. For example, **do not use “*Catharus* thrushes,”** but rather “thrushes in the genus *Catharus*” or “*Catharus* species” or “*Catharus* spp.,” or simply “*Catharus*,” depending on the context. See examples:

- 1) Fall stopover strategies of three species of thrush (*Catharus*) in northern South America...
- 2) Three *Catharus* species migrate through northern Colombia...
- 3) Because *Catharus* are expected to depart shortly after sunset...
- 4) Thrushes in the genus *Catharus* have been widely used as a model system...

Time. Use the 24-hour clock (0800 hours and 2300 hours). Abbreviate seconds, minutes, and hours, months, years, million years, and million years ago as s, min, hr, mo, yr, myr, MYA . Use plural not possessive for time: the 1950s.

Temperature. –20 °C

Title of article. Maximum word count is 25. Bold the title and place flush left. Scientific names of species are not necessary in article titles but may be included. Do not include a list of species names in the title. Titles may not include numerical series or designations. Do not include the authority for taxonomic names in the Title or Abstract. Avoid vague declarations (...effects of...), and strive for specific information content (...fungi kill tardigrades...). See also **Running Head**.

Trademark symbols. Delete all trademark symbols such as TM or ®

Tradeoff. No hyphen.

Underlining. Do not use in text, except where an underlined term has a special meaning.

Unique. Unique is definitive, and does not carry a modifier (i.e. no such thing as ‘very unique; also see below).

URLs. URLs can be included in manuscript text.

U.S. or USA or United States or United States of America. No US. UK is okay.

Unpublished data. The term “unpublished data” will not be used in manuscripts. Such citations should look like these examples: (T. K Jones personal communication), (T. K. Jones personal observation).

Very. Words such as very and extremely have little meaning. Avoid them.

vs. vs. not versus.

Website. One word, website.

SAMPLE ARTICLE FORMAT (use double-spacing in your submission)

Red-eyed Vireo migration

RESEARCH ARTICLE

Prolonged spring migration in the Red-eyed Vireo (*Vireo olivaceus*)

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[these dates will be supplied by the publisher]

ABSTRACT

We used archival geolocators to track the migration of Red-eyed Vireos (*Vireo olivaceus*), abundant forest songbirds with significantly increasing breeding-population trends, to identify important stopover and wintering regions. All individuals from a single breeding site ($n = ..$

Keywords: frugivory, geolocators, geologgers, migration, Red-eyed Vireo, stopovers, *Vireo olivaceus*

Migración Prolongada de Primavera en *Vireo olivaceus*

RESUMEN

Usamos geocalizadores para rastrear la migración de *Vireo olivaceu*, un ave canora de bosque abundante con tendencias a incrementar su población reproductiva, para identificar regiones importantes de parada e invernada. Todos los individuos de un único sitio de reproducción ($n = ...$

Palabras clave:

(non-English abstract in Spanish, French, or Portuguese will be provided by the Publisher. Any other language should be provided by the author)

INTRODUCTION

Widespread and long-term effects on populations of songbirds that migrate to the tropics for the northern winter are driven by both breeding-ground productivity and mortality during migration and the nonbreeding season (Terbrough 1980, Sherry and Holmes 1995, Faaborg et al. 2010). Data on the timing of migration, routes taken, stopover locations and durations, and overwintering locations are needed to permit an informed assessment of conservation

METHODS

We used data from light-level geolocators (Mk20S, 0.6 g; British Antarctic Survey [BAS]) deployed on male Red-eyed Vireos ($n = 26$) between June 3 and June 17, 2011, and retrieved between 26 May and 9 June 2012 ($n = 10$) at the 150-ha Hemlock Hill Field Station in northwestern Pennsylvania (41.8°N, 79.9°W). The site is covered by mature mixed-deciduous forest with scattered Eastern Hemlocks (*Tsuga canadensis*)

RESULTS

Wintering Locations and Migration Routes [second level heading]

All Red-eyed Vireos from the Hemlock Hill breeding population wintered in a similar region in northwestern South America that represented an area of ~15% of the total winter range (Table 1 and Figure 1). Average distance between individuals (all pairwise comparisons, $n = 45$) was 712 ± 300 km (mean \pm SD), and average nearest-neighbor distance was 286 ± 142 km ($n = 10$). Most individuals (8 of 10) occupied a single wintering region, but two individuals (Figure 2E, 2I) first occupied a winter site from late October to the beginning of December before moving ~40 km westward to their final wintering region, where they stayed for 4 months. The spring migration route was similar among all 10 individuals as birds migrated through Central America to the Yucatan Peninsula (Figure 2).

Stopovers and rate of migration [third level heading]. Spring migration, from start to finish, averaged 46 days (range 39–52 days), and with stopovers, migration rate averaged 146 km day^{-1} (Table 2). However, most of the spring migration consisted of stopover days, and individuals covered the journey of ~6,600 km in only 13 days of flight. Migration rate and stopover duration varied greatly among different stages of the journey (Table 2 and Figure 2). Red-eyed vireos had prolonged stopovers in Colombia (18.6 ± 4.9 days [all durations reported as means \pm SD]; range: 12–27). **Fourth-level heading.** All birds remained at the breeding site throughout August, but the onset of fall migration in September was unknown because birds could have moved south with no change in longitude compared with the breeding site. Average arrival date at the wintering site was October 22 (range: October 14 to November 4).

DISCUSSION

Red-eyed Vireos from this population all overwintered in northwestern South America (Figure 1) in either the Amazon or Orinoco River basins. These river basins are perhaps the most pristine region in South America, with >90% forest cover (Fraser et al. 2012). Two of the 10 Red-eyed Vireos (Figure 2E, 2I) changed locations during the winter season, both to the southwest of their initial site, but over relatively short distances (400 km). Intratropical migration has

ACKNOWLEDGMENTS

We thank L. Welch and J. Silverton for assistance with field work and E. Jones for statistical assistance. We also thank O. Love. [Copyeditors will remove any editors or reviewers who are thanked here, except “anonymous reviewers”.]

Funding statement: [include grant numbers]. [Required: A list of funders, a statement about whether any funders had input into the content of the manuscript, and a statement about whether any funders required their approval of the manuscript before submission or publication.]

Ethics statement: [Required: List of protocols used, license numbers, etc.] [For example: **Ethics statement:** This research was conducted in compliance with the *Guidelines to the Use of Wild Birds in Research*.]

Author contributions: G.R.H. formulated the questions; R.A.K. and G.R.H. collected data and supervised research; B.W.A. analyzed the data; and G.R.H. wrote the paper. [this sample is from a different paper]

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APPENDIX

The Appendix may contain text and/or tables. If there is more than one Appendix, then label them Appendix A, Appendix B, etc. Tables within appendices continue the table numbering from the earlier sections of the paper, e.g., “Appendix A Table 5.” Same for figures. For instance, the first figure in Appendix A may be Figure 5, and it would be cited as “Appendix A Figure 5.” Supplemental Tables and Figures should be named Supplemental Material Table S1 and Supplemental Material Figure S1, but only use Supplemental Material files for material that is too large to fit on one or two journal pages or for content that is truly supplemental such as analytics, computer code, etc., or simply would be too large for a page in the journal, and for datasets and audio and video files).

Figure captions:

Figure 2. Estimated migration routes, timing, and destination for individual male Red-eyed Vireos ($n = 9$) (**A–I**) tracked with geolocators from the Hemlock Hill, Pennsylvania, breeding population, 2011 to 2012. Dashed lines indicate periods where locations are uncertain because of equinox periods or low-confidence sunrise-sunset transitions. The individual maps are arranged according to time of departure from South America from earliest (**A**) to latest (**I**)...

Table 1. Wintering locations in South America of Red-eyed Vireos ($n = 10$) migrating from northwestern Pennsylvania. Values are means (with SD in parentheses), and n is the number of days used to estimate location. Letters correspond to maps in Figure 2.

Bird	Latitude	Longitude	n
A	N 1.39° (2.90)	W 64.15° (0.98)	150
B	N 0.56° (2.05)	W 64.15° (0.98)	147
C	S 3.54° (2.99)	W 69.00° (1.11)	157
D	S 3.80° (2.56)	W 65.2° (0.70)	151
E ^a	N 1.52° (2.61)	W 59.15° (0.66)	38
	N 1.08° (2.30)	W 62.42° (0.63)	119
F	S 0.55° (3.13)	W 69.93° (0.94)	166
G	N 3.27° (2.12)	W 62.87° (0.91)	148
H	N 7.24° (2.24)	W 64.38° (0.71)	160
I ^a	S 0.64° (2.45)	W 60.62° (0.83)	35
	S 3.01° (1.80)	W 63.33° (0.73)	110
J ^b	N 1.81° (1.73)	W 63.70° (0.52)	157

^a Individual changed locations during seasons; listed in chronological order.

^b Not depicted in Figure 2.