

Ecosphere

Instructions for Authors

In order to provide speedy publication online, authors are expected to provide a final version of the manuscript that is ready for posting. Authors are encouraged to refer to these instructions throughout the preparation of the final manuscript and to check, section by section, that each of the instructions has been followed. For purposes of review, submitted manuscripts need not adhere to journal style in every detail; however, *failure to adhere to the journal style outlined below in the preparation of the final accepted manuscript will delay online publication.*

MANUSCRIPT FORMAT AND ORGANIZATION

All manuscripts should be submitted in Microsoft Word 1998–2007 (.doc, .docx) format. Keeping the document simple (e.g., avoiding linked or embedded objects, images, and other advanced word-processing features) helps to ensure that the typesetting system can make efficient use of the file. Embedded graphic objects, such as shapes and brackets used to group data sets, cannot be typeset. Do not use Word's hidden text feature to remove text from a manuscript. The hidden text will remain within the encoding of the document and will be typeset. If you do not wish for pieces of text to be typeset, the text must be deleted entirely from the manuscript file prior to submission. Make sure you have accepted all changes, turned off track changes, and deleted any comments.

All papers must be in English. Use American spellings (e.g., behavior, not behaviour).

Assemble the manuscript in the following order: title page (including the title, author's/authors' names, affiliations, corresponding author's e-mail address), abstract, key words, body of article (generally including Introduction, Methods, Results, Discussion sections), acknowledgments, literature cited, tables, figure captions, and, if appropriate, appendices (title, body of appendix, appendix tables, appendix figure legends). Figures should be submitted in individual files; do not place them in the file of the text and tables.

The entire manuscript must be double-spaced (text, literature cited, tables, figure legends, etc.) at three lines per inch (12 lines/10 cm), with a 1-inch margin on all sides. Use 12-point Times or Times New Roman font. Do not hyphenate words at the right margin or justify the right margin. Remove line numbers.

Distinguish between similar-looking but disparate symbols such as the letter "x," a multiplication sign, and a Greek chi, or hyphens, minus signs, en dashes, and em dashes. Use word processor special characters from the Word character palette (i.e., "Insert Symbol"). Do not try to approximate the look of certain characters by creating your own symbol (e.g., a superscript "o" will translate as a superscript letter "o," not a degree sign). Do not use the small caps feature in Word or all capital letters in different type sizes to achieve small caps.

SECTION-SPECIFIC STYLE AND REQUIREMENTS

Title page

Title of article: Titles are limited to 120 characters, including punctuation and spaces. Genus and species names should appear in *italics*. References to taxonomic

authorities should not appear in the title. DO NOT USE ABBREVIATIONS or dashes within the title.

Authors' names: Authors' names should appear below the title in continuous lines. For more than three authors, use a series comma and "and" between the last two authors' names.

Authors' affiliation addresses: Affiliations should be listed completely; DO NOT USE ABBREVIATIONS FOR INSTITUTIONS. Include zip codes of institutions. If there is a single address for all authors, it should appear immediately below authors' names. If authors have different addresses, key authors to addresses using superscripted numbers.

Footnotes: Footnotes are used for the corresponding author's e-mail address and any present addresses of any author. Provide only the corresponding author's e-mail address. (A present address is one that is different from the affiliation at the time the work reported in the paper was performed.) These footnotes should be keyed to individual author's names in numerical order following the last number of the author affiliation addresses. Do not use Word's footnote or endnote features to create this text. Set the text for these footnotes on the title page below the author affiliations, before the abstract. The typesetting system will set the text in the correct placement.

Other information: Information regarding contribution numbers or dedications should appear in the acknowledgments section, not as footnotes on the title page.

Sample authors, affiliations, and footnotes:

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Abstract

The abstract should explain to the general reader why the research was done and why the results should be viewed as important. It should include very brief statements of the *purpose* of the research, the *methods* used, *scientific names* of the organisms studied, *results*, and *significant conclusions*. Descriptions of the experiment in the Abstract should be in the past tense. References to taxonomic authorities and statistical results (*P* values, *R*² values) should not appear in the Abstract; these should appear at the first text reference in the Introduction or later. The Abstract should not contain any references to literature citations. The length of the Abstract may not exceed 350 words.

Key words

There should be no more than 12 key words or phrases. All items should appear in alphabetical order and are run in as a paragraph. Items should be separated by semicolons, with a period after the last item. Key words should include full, unabbreviated genus and species names of the focal species and geographic information.

Acknowledgments

The acknowledgment is a personal statement by the author. Information regarding the division of labor for the paper or dedications should appear in the Acknowledgments.

Literature Cited

Before submitting the final version of the manuscript, check each reference in the text against the citations in the Literature Cited section to see that they match exactly and that all references in text have a corresponding citation in the list and vice versa. Check that each citation has complete information. Failure to do so may result in charges for alterations in proof and may delay publication.

Citations in Literature Cited section

Use initials for authors' and editors' first names.

For a list of more than 11 authors, use the first author's name and initials, followed by "et al."

For institution names in place of author names, make sure that abbreviations in the citation match that in the reference in text (e.g., "USDA Forest Service" in both places, not spelled out in one and not the other).

Journal names should be spelled out in full, not appear as abbreviations.

Use the formats given below:

1) Journal article: author, date, title, journal name, volume, pages:

Hargreaves, A. L., L. D. Harder, and S. D. Johnson. 2010. Native pollen thieves reduce the reproductive success of a hermaphroditic plant, *Aloe maculata*. *Ecology* 91:1693–1703.

Include a doi only if volume and page range/article numbers are not known.

2) Book: author, date, title, publisher (name, city, state, country); do not include the total number of pages in the book:

Sokal, R., and F. Rohlf. 1995. *Biometry: the principles and practice of statistics in biological research*. Third edition. W. H. Freeman, New York, New York, USA.

3) Article in book: author, date, title, pages, editor[s], book title, publisher (name, city, state, country):

Witman, J. D., and P. K. Dayton. 2001. Rocky subtidal communities. Pages 339–366 *in* M. D. Bertness, S. D. Gaines, and M. E. Hay, editors. *Marine community ecology*. Sinauer, Sunderland, Massachusetts, USA.

4) Article in symposium: author, date, title, pages, editor, book title, series title, number in series, publisher (name, city, state, country):

Tate, C. M., T. F. Cuffney, G. McMahon, E. M. P. Giddings, J. F. Coles, and H. Zappia. 2005. Use of an urban intensity index to assess urban effects on streams in three contrasting environmental settings. Pages 291–315 *in* L. R. Brown, R. M. Hughes, R. Gray, and M. R. Meador, editors. Effects of urbanization on stream ecosystems. Symposium 47. American Fisheries Society, Bethesda, Maryland, USA.

5) Article in proceedings of a conference or symposium: author, date, title, pages, editor, conference title, publisher (name, city, state, country):

Wang, H. V., and R. S. Chapman. 1995. Application of vertical turbulence closure schemes in the Chesapeake Bay circulation model: a comparative study. Pages 283–297 *in* Malcolm L. Spaulding and Ralph T. Cheng, editors. Proceedings of the 4th International Conference, San Diego, California, October 26–28, 1995. American Society of Civil Engineers, New York, New York, USA.

6) Dissertation or thesis: author, date, title, Dissertation [for Ph.D.] or Thesis [for M.S., M.A.], university (name, city, state, country):

Nelson, W. A. 2004. Competition in structured zooplankton populations: coupling population genetics and dynamics using theoretical and experimental approaches. Dissertation. University of Calgary, Calgary, Alberta, Canada.

7) Government or institutional monograph [separate publication]: author, date, title, type and number of publication, publisher (agency or institution name, city, state, country):

Graham, R. T., S. McCaffrey, and T. B. Jain. 2004. Science basis for changing forest structure to modify wildfire behavior and severity. RMRS GTR-120. USDA Forest Service, Rocky Mountain Research Station, Fort Collins, Colorado, USA.

8) Computer program: author, date, title, publisher (name, city, state, country):

R Development Core Team. 2007. R: a language and environment for statistical computing. R Foundation for Statistical Computing, Vienna, Austria.

9) Database: author, date, title, URL (note angle brackets and lack of punctuation):

State of New South Wales, Department of Primary Industries. 2005. Fishing and aquaculture database: *Caulerpa taxifolia*. <http://www.dpi.nsw.gov.au/fisheries/pests-diseases/marine-pests/species/caulerpa-taxifolia>

10) Documents that are published online: author, date, title, URL (note lack of ending punctuation).

Spratt, J. 2002. A history of natural and anthropogenic fire disturbance in central Florida. Katharine Ordway Preserve, Melrose, Florida, USA.
<http://www.ordway.ufl.edu/firehist.htm>

11) Work formally accepted, awaiting publication. Include *in press* at the end of citation if the year of publication is known or in place of the year of publication if it is unknown:

- Tylianakis, J. M., E. Laliberte, A. Nielsen, and J. Bascompte. *In press*. Conservation of species interaction networks. *Biological Conservation*. [doi: 10.1016/j.biocon.2009.12.004]
- Turner, D. C. *In press*. The vampire bat: a field study in behavior and ecology. Revised edition. Tropical Science Center, San Jose, Costa Rica.
- Travis, J. 1994. The vampire bat. *In* J. Smith, editor. *Bats*. University of Chicago Press, Chicago, Illinois, USA, *in press*.

Citation order

Follow alphabetical order. Alphabetize names of first authors on a letter-by-letter basis; a particle, definite article, or preposition that is part of the name should *precede* the family name (e.g., van der Hoof). Alphabetize citations with multiple authors by the last names of second and succeeding authors.

Two or more entries by the same author(s) should be ordered chronologically:

- Smith, G. C. 1980.
 Smith, G. C., S. T. Baker, and A. B. Jones. 1972.
 Smith, G. C., S. T. Baker, and A. B. Jones. 1978.
 Smith, G. C., and A. B. Jones. 1969.

Tables

Failure to follow the critical requirements will result in delay of publication. Production of the article will not begin until properly formatted tables are received. Recommendations are given to assist authors in creating high-quality tables.

Authors are encouraged to also read instructions for preparation of tables found at <http://allenpress.com/resources/library>.

Critical requirements of table formatting

All tables must be mentioned in text in numerical order.

Each table should fit on an 8.5" × 11" page in portrait view in 10-point type, width-wise. Tables may run to subsequent pages in the vertical direction only. Wider tables (those that fit only on a landscape-oriented page) or tables with sections with varying numbers of columns must be divided into separate tables by the author (*i.e.*, tables **must** have the same number of columns from the first row after the headings to the bottom row of the entire table). Authors should consider whether the data in the table are necessary in that form and whether the same information is provided in a figure or elsewhere in the text.

Tables **must** be in editable form, *i.e.*, created by using the "Insert Table" function in Word, rather than using tabs or spaces. *PDF files, Excel files, or tables inserted as graphics cannot be used for typesetting.*

Each table should contain only one set of column headings. Each column heading should appear completely in its own table cell; do not break column headings by creating additional rows or splitting cells.

- Do not use shading or colors.
- Do not use blank rows or columns or returns within cells or expand rows to indicate spacing. Do not split cells to indicate indented text.
- Do not use keyboard spaces to align items in a column.
- Do not place table captions or footnotes within a cell in the formatted table.
- Spanner headings should be used to group columns. Use “Merge cells” in Word’s table menu to create spanner heading cells. Horizontal (never vertical) side headings may be used to group rows. Use em spaces (from “Insert symbol” menu, “Special characters”) to indent items in groupings under side headings.
- Open or closed parentheses, square brackets, or curly brackets should never be used within tables to indicate association between rows.

Properly formatted table below

Note that the heading for column 1 is in a cell merged from two cells; the spanner headings are centered above their respective column headings; em-spaces are used to indicate subheading order; values (e.g., mean \pm SE) appear together in one cell; ellipses are used to indicate “no data.”

To see paragraph marks (hard returns) and hidden formatting symbols (such as em spaces and word spaces) in Word, click on the “¶” sign in the “Paragraph” menu.

Table 1. This is a properly formatted table. Text text text text text text text text.¶

Heading	Spanner heading		Spanner heading	
	Heading (unit)†	Heading (unit)‡	Heading (unit)	Heading (%)
Side heading				
○Subheading	0.125	98
○○Subheading with more text all in one cell	0.001 \pm 0.0001	0.001	0.125	...
Side heading				
○Subheading	0.002 \pm 0.0001	0.003	0.004	35
○○Subheading	0.0005 \pm 0.0001	0.0006	0.0007	16

Note: Text text text text text text text.¶

† Footnote text text text text.¶

‡ Footnote text text text text.¶

See the next page for an improperly formatted table.

Recommendations

Table captions should not be more than one sentence long and should tell what the table is about, without simply repeating the column heads.

It is preferable to format a table so that data may be compared within columns rather than across rows (i.e., rows are independent variables, columns are dependent variables).

Every column and row should be labeled. The labels should apply to everything in that row or column (i.e., do not combine different types of data within a cell; use separate rows or columns for different types of data).

Units should appear in headings in parentheses, not repeated within each data cell, e.g., “Mouse density, M (no./m²).” When units apply to the entire table, they may appear in the table caption or in the Notes section below the table.

Present the same number of decimal places in each cell of a column. Use leading zeroes, e.g., “0.3” instead of “.3”.

Significant differences may be identified by superscripted uppercase letters. If error measurements are presented, these letters should be superscripted after the mean, not after the error (i.e., $32^A \pm 1.3$, $30^{A,B} \pm 1.0$, $29^B \pm 0.7$).

Tables Notes section

Information, including descriptions of the methods used for obtaining/arranging the data and statistical analyses, should be placed in a “*Note*” below the bottom rule of the table and before any footnotes. Notes should *not* be placed in a cell within the formatted table. The word “*Note*” (for a single sentence) or “*Notes*” should appear in italics, followed by a colon, with a paragraph indent before it.

The meaning of blank cells in tables should be explained in the Notes section.

Symbols, ellipses, and abbreviations should all be defined in the Notes section and abbreviations should be exactly as those used in the text. To avoid repetition in tables and figures, refer the reader back to a previous figure or table (e.g., “Symbols are as in Fig. 1.”).

To include more than three or four literature sources for a table, the sources can be identified by arabic numbers in the table in a column headed “Source” and the key to literature references may appear in the table Notes section, e.g., “Sources are: 1, Smith (1996); 2, Jones (1984); 3, Van Buren (2006).”

Table footnotes

ESA journal style prefers the following footnote symbols in this order: †, ‡, §, ¶, #, ||, and then doubled symbols. Footnote symbols are ordered by first occurrence within the table, assuming that tables are read across each row from top to bottom (i.e., any occurrence in the first row precedes any occurrence in the next row, including row headings). Authors should ensure that footnote symbols within the table match those below the Notes section.

Levels of significance should be expressed as $*P < 0.05$, $**P < 0.01$, $***P < 0.001$. Use asterisks only for this application.

Figures

Failure to follow the critical requirements will result in delay of publication. Production of the article will not begin until properly formatted figures are received. Further recommendations are given below to assist authors in creating high-quality figures.

Critical requirements of figure preparation

Figure files should be saved in TIFF or EPS format. The preferred format is TIFF. Most software gives the option to “save as” or “export” as TIFF. When saving figures in TIFF format, select LZW Compression to reduce the file size.

Figures should be saved and uploaded to Ecosphere’s EcoTrack as separate files that are clearly named both to identify figure placement in the manuscript (i.e., Fig. 1, Fig. 2, Fig. 3) and to identify the manuscript to which they belong (e.g., nameMSnumber_fig2.tif).

All multi-panel figures must be assembled into one figure and must as a whole fit within the acceptable page size limits (see below). Each panel should be labeled in uppercase letters without punctuation (no periods or parentheses).

Remove unnecessary labels and all captions from the figure file.

The font size used in figures at the final size chosen for publication should be close to 8-point type and no smaller than 6-point type for readability.

Figures containing color should be created using the RGB option rather than CMYK and should not be bitmap images.

TIFF files must be flattened and must not be submitted as layered files.

Figures in EPS format must have the text converted to outlines. If this is not done, fonts may be substituted during production and characters may not display correctly. Caution: Characters cannot be changed after they have been converted to outlines, so it is important that the labels are correct before conversion.

Figures should be 1, 1.3, or 2 columns wide. Figures should not exceed the maximum height listed in the table below to allow for sufficient space to place the caption under the figure. Images will be published online in an upright orientation, never “turned” on the page.

Final size	In inches	In cm	In points	In picas
1-column width	2.9	7.5	216	18
1.3-column width	3.9	10.1	288	24
2-column width	6.1	15.6	444	37
Height maximum	6.8	17.2	492	41

The Publications Office reserves the right to resize figures if necessary.

Figures with resolutions below the minimum may appear blurry or unreadable. Figures with resolutions above the maximum will not have a higher quality appearance and may result in unnecessarily large file sizes.

Figure type	File type	Resolution	
		Minimum	Maximum
Chart or graph	TIFF or EPS	200	450
Photo with text	TIFF or EPS	200	300
Photo	TIFF	200	300

Figures should be created with a white background only (not a transparent background).

Crop excessive white space around figures to 2 points of white space to ensure accurate size and proper placement.

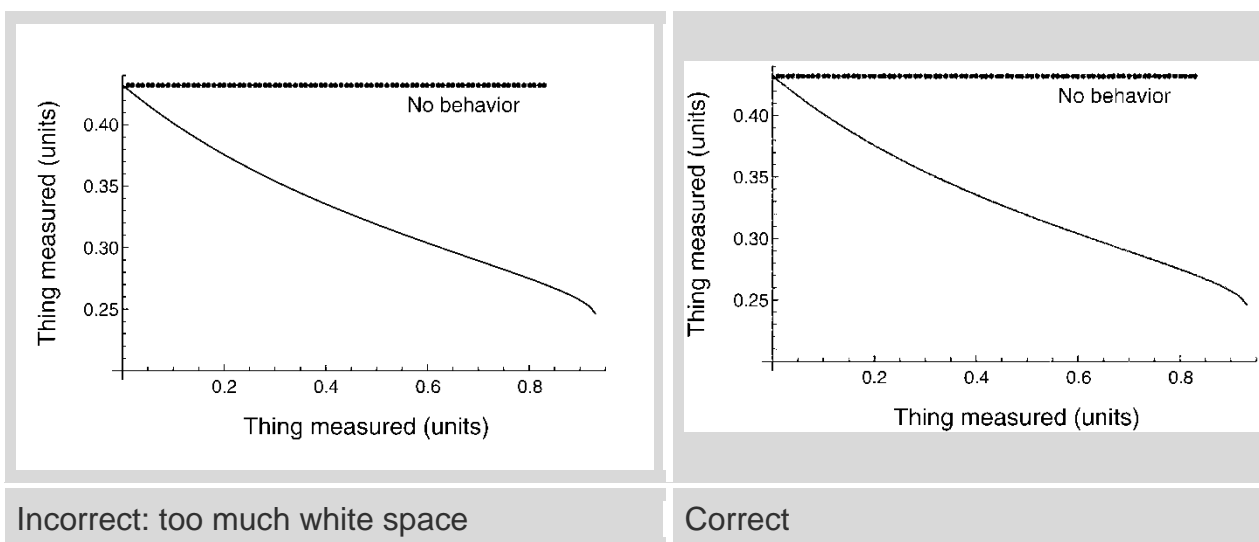


Figure style recommendations

Keep blank space to a minimum by placing axis labels near the axes, multiple panels close together, and “outlier” information (compass directions, scale bars, keys) within the margins of the figure.

The y-axis should be for the dependent variable and the x-axis should be for the independent variable, especially in regressions.

All lines, symbols, fills, and colors should be distinguishable at the size at which the figure will be posted online in paged PDF form and the meanings should be identified in the figure caption or in a key within the figure panel. Fills should be simple and not cluttered; gray shadings are preferable to busy, tiny patterns. (Grayscale should be achieved using grayscale mode, not bitmap.)

Axes and lines should be no smaller than 0.5 points and no larger than 1.5 points.

Axes should have tick marks and axis numbers or labels. Tick labeling should align with ticks.

The same font (Arial is preferred) should be used throughout all the figures.

All axes should be labeled, with units in parentheses as appropriate, e.g., “Mouse density, M (no./m²)”; note that variable abbreviations do not appear in parentheses. Greek symbols should appear in upright, non-italic form. Labels should make sense to the reader without reference to the text of the paper.

Place the y-axis label to the left of the axis and orient it to read sideways from bottom to top of the graph.

Italics should be used only for scientific names or for one-letter variable abbreviations.

All figures should be numbered in the order in which they are mentioned in the text.

Only one key is necessary in a multipart figure if the same key applies to all parts.

Figure captions

Figure captions should tell what the figure is about, without simply repeating the axis labels.

All variable abbreviations, symbols, and acronyms must be identified and appear in the same form in text, tables, and figures. To avoid repetition, refer back to a previous figure or table (e.g., “Symbols are as in Fig. 1.”).

Data numbers that have been logarithmically transformed (scale divisions are uniform) do not have units. The original units should be included in the figure legend, e.g., “Original data were in meters.” Data that are simply plotted on a logarithmic scale (scale divisions are logarithmically [unevenly] spaced) are still the raw data and should have units.

In the figure caption, refer to panels or parts of the figure within parentheses, e.g., “Fig. 1. Mouse density for (A) site 1 and (B) site 2.”

In the figure caption, *describe* symbols in words rather than using the symbols themselves, e.g., “solid diamonds identify mice in 2002; open diamonds identify mice in 2003.” For nonstandard and “indescribable” symbols, use a key containing the symbols in the figure itself.

It is the author’s responsibility to obtain permission to reprint from the copyright holder (usually the publisher) of any material used in figures that has been published previously. Photo (or artistic) credit should appear in the caption for any photo taken (or illustration done) by someone other than an author of the paper.

Appendices and Supplements

Generally, an appendix is material for viewing, and a supplement is material for downloading and using. Examples of appendices include figures and tables of additional information. Examples of supplemental material include R code, Matlab code, WinBUGS code, raw data sets, and modeling software.

Appendices

Appendices will be published online with the text of the manuscript and **will not be archived in *Ecological Archives***.

Refer to the sections above on instructions for the preparation of tables and figures to prepare those that appear in appendices.

Place appendix text, tables, and figure legends at the end of the paper following the figure legends of the main text. Provide figures for appendices as separate files.

Literature citations for references in the appendix should appear in the main list of literature cited, **not** as a separate list with the appendix.

Videos should be provided in MPG format. Provide a short description of the video to appear in the article. Videos will be given separate doi numbers and links will appear in the HTML version of the article online.

Supplements

Supplemental material that does not qualify as an appendix will be published in *Ecological Archives*, found online at:

<http://esapubs.org/archive>

For detailed instructions on the preparation of supplements for *Ecological Archives*, see http://esapubs.org/archive/archive_as_authors.htm#Sup

Data files should be submitted in separate ASCII (text)-based files using comma or tab-separated variables. In the textual description of the data files you must include information on what the rows and columns comprise, checksum values for download verification, information on specific codes incorporated into the files (i.e., “blank values are denoted as “-9999”), and any additional information for using the files. We do not accept Excel spreadsheets for posting. Tab or comma-delimited ASCII text files should be submitted instead. Software should be submitted both as source code and compiled (executable) code. Compiled code submitted without accompanying source code is not acceptable.

In addition to the supplement files themselves, as in an R script file, the author(s) must submit a Word document detailing the following: (1) authors, title, and journal, of main manuscript, (2) a brief title for the supplemental material that is descriptive of the content but restricted to one phrase or sentence, (3) the authors of the supplement along with their full addresses, (4) a list of the files in the Supplement, and (5) a description of how the files are to be used. See example of a supplement page here below:

Andrés Baselga. 2010. Multiplicative partition of true diversity yields independent alpha and beta components; additive partition does not. *Ecology* 91:1974–1981.

Supplement

R scripts for conducting the simulations described in the main text.
Ecological Archives E091-135-S1.

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[File list \(downloads\)](#)

[Description](#)

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File list

[simulations.R](#)

Description

The code included in `simulations.R` allows conducting the simulations described as Procedure 1 and Procedure 2 in the main text, as well as the computations for comparing the joint probabilities of two random events involving alpha (or gamma) and beta pairs with the product of marginal probabilities.

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GENERAL RULES OF STYLE

Miscellaneous

Early in the manuscript, identify the type(s) of organism or ecosystem of study; e.g., “*Cornus florida* L. (flowering dogwood), a small deciduous tree.” Avoid descriptive terms that may be familiar only to specialists. Provide the scientific names of all organisms. Common names may be used when convenient after stating the scientific names.

Define all symbols, abbreviations, and acronyms the first time they are used.

Latin abbreviations, e.g., *post hoc*, *a priori*, *ad libitum*, are always roman (upright, not italic).

Each product listed, e.g., animal food, analytical device, should be accompanied by the name and location of the manufacturer, e.g., “ArcInfo, Environmental Systems Research Institute, Redlands, California, USA”.

After their first mention, generic names may be abbreviated unless two different genera that begin with the same letter might be confused. Spell out generic names often enough so that the reader does not forget them (including the first time used at the beginning of each major section), unless the article deals with only two or three species.

Units of time should be abbreviated as follows: s, second; min, minute; h, hour; d, day; yr, year. Abbreviate only when the time span is an experimental result or part of the methods used. Do not abbreviate in such usages as “The experiment was conducted once in each of two years.”

Use the 24-hour clock for diel time: 08:00. Calendar dates should follow the format “20 June 1987.”

Spell out unfamiliar acronyms the first time they are used in text. Common acronyms (ANOVA, GIS) need not be spelled out.

Do not use references to unspecified parts of the paper, such as “see above” or “discussed later.” If a reference to another section must appear, refer specifically to the section, e.g., “see *Materials and methods: Species description*.”

Headings

Most articles should be organized in sections labeled Introduction, Methods, Results, Discussion, Acknowledgments, Literature Cited. If the nature of your research requires a different organization, specify the level of each section heading using the formatting found in the table below. Do not use the heading “Summary.”

There are four types of headings:

Order	Example	Format
First order	Materials and Methods	Initial caps, flush left
Second order	Species description	Sentence case, italic, flush left
Third order	Nestling survival	Sentence case, italic, run into paragraph
Fourth order	1. Reproductive factors	Numbered, sentence case, italic, run into paragraph

Do not use outline formatting (I, II, III, A, B, C, etc.) in headings. Make heading hierarchy clear.

In-text Literature References

Adjoining references in the text appear in parentheses in chronological order. Within the same year, arrange them in alphabetical order by author's name; comma between citations; no comma between author's name and the date, e.g., "(Jones 1977, 1989, Smith 1977, Van Buren 2006)." When an author has more than one paper in any one year, use a comma between *a* and *b* (Smith 1976*a, b*).

To reference page numbers, tables, or figures from a book, use the following format: "(Brillig et al. 1980:59-76)" or "(Slithy and Tove 1984: Fig. 3)." Do not include the page numbers or figure reference with the literature citation.

Do not include references to "this paper," i.e., the paper presently being read.

Refer to published works not actually seen but mentioned in a work consulted by the author as: "(Lyons 1925, as cited in Katz 1980)" (list Katz 1980 but not Lyons 1925 in the Literature Cited).

Manuscripts in preparation or under review, as well as abstracts, other materials to which access is limited (local or private reports or those with limited distribution), and other unpublished data or comments, should not be included in the Literature Cited. The only permissible references to unpublished material (not yet *in press*) are:

personal observation[s] (one or more authors of the present paper)

personal communication (do not include affiliation)

public communication (for material found on the Internet that is not part of a document or database; see "References to material on the Internet")

unpublished manuscript

unpublished data (numerical data only)

For example: (F. J. Smith, *personal communication*); note italics.

For unpublished material, include the names and initials of all authors, provided there are no more than four. In that case, use the first author's initials and last name and "et al."

Use semicolons to separate name and date references from references to unpublished material: e.g., "(Smith 1993, Jones 1994; A. Smith and B. Jones, *unpublished manuscript*)."

In a single-author paper, any *personal observations* are assumed to be from the author and the author's name should not be included.

Manuscripts formally accepted for publication but not yet published should be cited in text like published articles when the year of publication is known. When the year of publication is not known, cite as: "(Smith, *in press*)."

For references to material on the Internet, only material that has significant likelihood of availability in the future should be cited, that is, material accessed through institution or government agency websites. Individuals' personal web pages *should not* be cited. If the material is a document, database, or program with a title, a year of publication, and publisher/source information, it should appear in the list of literature cited. For material that is a public communication, e.g., a press release or unpublished material on web pages, the URL should appear in angled brackets, e.g., "*public*

communication, <<http://ecosphere.esapubs.org>>.” Authors must make certain that URLs map directly to the material being cited, rather than to the home page of the organization.

Statistical Analyses and Data Presentation

Authors are free to interpret statistical analyses as they see fit. The author, however, needs to provide the reader with information sufficient for an independent assessment of the analysis. Thus, the assumptions and the model underlying any statistical analysis must be clearly stated, and the presentation of results must be sufficiently detailed. Sampling designs, experimental designs, data collection protocols, precision of measurements, sampling units, and sample sizes must be succinctly described. Reported statistics usually include the sample size and some measure of their precision (standard error [SE] or specified confidence interval [CI]) except where this would interfere with graphical clarity. The specific statistical procedure must always be stated. Unusual statistical procedures need to be explained in sufficient detail, including references if appropriate, for the reader to reconstruct the analysis. If a software product was used, complete citation should be given, including the version number. When reporting results, actual *P* values are preferred. For more information, see “[Guidelines for Statistical Analysis and Data Presentation](#)” prepared by the Statistical Ecology Section of ESA.

Numbered Lists

In general, lists should be run into the rest of the text, not separated from text using the numbered list feature in Word. Use the following style: “(1) ..., (2) ..., and (3) ...” Do not use “(a)..., (b)..., and (c)...” or roman numerals. For long lists, i.e., each number begins a paragraph, use the numbered list feature in Word.

Text Footnotes

Footnotes should not be used. Incorporate footnote-like material into text as parenthetical material.

Capitalization

For common names of organisms, only bird common names (see *AOU Checklist*) and names containing proper nouns (Douglas-fir) are capitalized. Adjectives made from scientific names (bombycid) are not capitalized. Names of statistical tests that are not named for their authors are not capitalized though their abbreviations are, e.g., “linear discriminant function analysis, LDA.”

Hyphenation: Compound Words

Refer to the Chicago Manual of Style and Merriam-Webster’s Collegiate Dictionary, 10th edition or later, for the proper use of hyphens in compound words.

Numbers

Spell out single-digit numbers and any number that begins a sentence; use Arabic numerals for 10 and above. Fractions follow the same rule: one-third, but 1/20; hyphenate all spelled-out fractions.

If numbers have units, those units must directly *follow* the numbers (e.g., “3 g”). Use numerals when the number precedes any standard unit of measure (including % and °C). Never use % alone (without a number); spell out “percentage” (or “percent”).

Use leading zeroes before decimal points (0.3, not .3).

Units

Express all quantitative data in the SI system of units. Consult *Standard for Use of the International System of Units* for guidance on unit conversions, style, and usage. An abbreviated version may be downloaded from the [ASTM website](#). **When one unit appears in a denominator, use a solidus (6 mg/L); use negative exponents and product dots (26.4 g·m³·h¹) for compound denominators.**

For units of time use the following abbreviations: s, second; min, minute; h, hour; d, day; yr, year.

Abbreviate standard units when they are associated with a number, but not when they stand alone, e.g., “9 cm,” but “dimensions were in centimeters.”

For non-SI data from a published source, convert the data to SI, and add the following parenthetical statement: “data were expressed in (non-SI unit) by (author) (date); (conversion factor),” e.g., “(data were expressed in calories per hour by Carpenter [1976]; 1 calorie = 4.186 J).”

Convert “equivalents” (milequivalents, etc.) to moles. Remember that a mole is a *number* of something: atoms, molecules, or charges. When *atoms* or *molecules* are counted, as in total phosphorus or N₂, or single-charge ions like chlorine or sodium, use the unit abbreviation “mol.” For cation exchange capacity or concentrations of ions with valences >1 (carbonate, sulfate, etc.), *charges* are counted; add a subscript lowercase c to the abbreviation: “mol_c.” The standard prefixes apply to the SI abbreviation for moles: “mmol,” “μmol.”

“Parts per million” is acceptable as long as “parts of what per what” is defined. It is preferable, though, to provide ppm as mg/kg or μL/L.

For monetary values, use U.S. currency, e.g., “US \$100.”

Math

Authors are encouraged to follow instructions for setting math found at <http://allenpress.com/resources/library>. All display math should be set in MathType.

Do not use keyboard spaces within MathType, except between text elements. MathType automatically spaces around operators (+, −, ~, etc.). Operators should always be styled as “Math,” not text. Matrices should be set with the Matrix function of MathType, not keyboard spaces. When more than a keyboard space is desired (e.g., an em-space), the characters from the space palette in MathType should be used. This palette also contains thin and thick spaces for use following Roman functions, if desired.

Set in-text (inline) math in Microsoft Word regular text; avoid using MathType for inline math. 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.”

Only characters that cannot be set using Word’s Symbol palette (as “normal text” or “Symbol”) should be set in MathType.

Do not set any display equations in figure captions, table captions, or table footnotes; these would be unreadable.

Italicize all variables (scalars) in mathematical expressions, including e (base of natural log), d (in dx , dt), and letters that identify graph coordinates (x , y). Do not italicize nonvariables that are identifying letters (tags) or abbreviations and operators that consist of more than one letter (ln, sin, exp, lim, var, cov, etc.), or numbers. Abbreviations that are computer codes are not italicized.

All variables, symbols, and acronyms must be identified at their first use and must appear in the same form in text, tables, and figures.

Subscripts to variable abbreviations should be no longer than four characters.

Set symbols that represent matrices and vectors in boldface roman type. Any identifying subscripts should be set lightface roman.

Refer to numbered equations in text as “Eq. 1” (no parentheses), “Eqs. 3 and 4b.”

If a statistical test was used, it should be named (t test, G test, F test.)

Degrees of freedom should be stated: one degree of freedom value for most statistical tests, two degrees of freedom (numerator and denominator) for F tests.

The variation statistic should be named, standard error (SE), standard deviation (SD), confidence interval (CI), or confidence limit (CL). If a single variation statistic is used throughout the paper, a single statement in the *Methods* section is sufficient.

The confidence interval *includes* the positive and negative variation, so “ $\pm 95\%$ CI” is nonsense. It should be written as “mean and 95% CI.”

Confidence *limits* are the upper and lower limits of the variation, so should be written as two numbers, “2, 4,” not as a range “2-4.”

revised 11/04/11