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MANUSCRIPT GUIDELINES FOR THE *JOURNAL OF WILDLIFE MANAGEMENT*

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Abstract: This guide provides information for preparing manuscripts submitted to the *Journal of Wildlife Management* (*JWM*) for publication consideration. Authors should submit manuscripts in the format and style presented in these guidelines, i.e., your manuscript format should be identical to this example. Proper preparation increases the probability and speed of acceptance.

JOURNAL OF WILDLIFE MANAGEMENT 00(0):000-000

Key words: author, format, guidelines, instructions, manuscript, style, *Journal of Wildlife Management*.

These guidelines update Gill and Healy (1980), Ratti and Ratti (1988), and those on the back cover of some issues of *JWM*. This update was prepared to make the guidelines more available to authors, to include basic format and style changes, and to provide additional examples. Authors should review a recent issue of the *JWM* but should understand there are

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differences between articles in final printed form and correct format of submitted manuscripts (e.g., key words, text columns, placement of tables and figures, line spacing). Check recent *JWM* issues for instructions that may supersede these guidelines, and for the name and address of the current Editor in Chief. Papers that clearly deviate from *JWM* format and style may be returned for correction before review.

HIGHLIGHTS OF GUIDELINES CHANGES

For those authors with experience and knowledge of *JWM* Guidelines, it may be helpful to identify and review significant changes in this manuscript. Fundamental changes include (1) most abbreviations have been eliminated from the LITERATURE CITED section; (2) spell out country names at the end of author and publisher addresses, except for United States use "USA;" (3) no use of underlined words to indicate italic type, i.e., use italic fonts where appropriate; and (4) ACKNOWLEDGMENTS are a separate section preceding LITERATURE CITED. Please review this document for additional changes.

POLICY

Referees and editors judge each submitted manuscript on data originality, concepts, interpretations, accuracy, conciseness, clarity, appropriate subject matter, and contribution to existing literature. Prior publication or concurrent submission to other refereed journals precludes review or publication in *JWM* (additional information in section on Transmittal Letter and Submission). The *JWM*, *Wildlife Society Bulletin*, and *Wildlife Monographs* have similar quality standards. Fisheries manuscripts are discouraged unless information is part of an account that mainly concerns terrestrial vertebrates.

PAGE CHARGES AND COPYRIGHTS

Current policies regarding page charges offer alternatives and are explained to authors after manuscripts are submitted, and when they are accepted for publication. Page charges may change annually; for members of The Wildlife Society in 1997, they were $65/page for the first 8 pages

plus $125 for each succeeding page (for nonmembers the rate was $125/page for all pages). Authors pay for alterations to page proofs (in 1997, $3.25/reset line), except for typesetting errors and editorial errors. If a manuscript not in the public domain is accepted for publication, authors or their employers must transfer copyright to The Wildlife Society. Publications authored by federal-government employees are in the public domain. Manuscript submission implies entrusting copyright (or equivalent trust in public-domain work) to the Editor in Chief until the manuscript is either rejected, withdrawn, or accepted for publication. If accepted, The Wildlife Society retains copyright.

COPY

Use quality white paper, 215 x 280 mm (8.5 x 11 inches) or metric size A4. Do not hyphenate words at the right margin, and do not right-justify text. Manuscripts produced on dot matrix printers are not acceptable.

Margins should be 3 cm (1 3/16 inches) on all sides. Do not violate margin boundaries to begin a new paragraph or the LITERATURE CITED at the top of a new page; i.e., do not leave >3 cm of space at the bottom of a page (except to prevent a widow heading). Type the senior author's last name (upper left) and page numbers (upper right) on pages 2 through the LITERATURE CITED, on tables and figure title pages, but not on the first page, figures, or illustrations. Do not underline words or use bold or italic font in the text to indicate emphasis. Scientific names should be in italic font. Keep the original manuscript and submit 4 quality copies. Submit a transmittal letter (see below) with your manuscript.

RUNNING HEAD, TITLE, AND AUTHORS

Page 1 of the manuscript should begin with the date (update with each revision), corresponding author's name, address, and telephone, FAX, and E-mail numbers (if available), single-spaced in the upper left corner. Thereafter, all text is double-spaced, including tables.

The running head (RH) is the first line following the correspondent's address. The RH is limited to 45 characters, left-justified, and typed in upper- and lower-case letters followed by a dot (or raised period) and the last name(s) of ≤ 2 authors. For ≥ 3 authors, use the name of the first author followed by "et al." Type the author's name(s) in italic font. The RH is used in final printed form as an abbreviated title at the top of each page following the title page.

The title follows the RH, is also left-justified in bold font, all upper-case letters, should not include abbreviations, acronyms, punctuations, and should not exceed 10 words (unless doing so forces awkward construction). In such cases, use #13 words. The title identifies manuscript content. Do not use scientific names in the title except for organisms that do not have, or are easily confused by, common names. Do not use numbers in titles or the RH.

Author's names are left-justified in upper-case letters followed by affiliation and address in upper- and lower-case letters (usually where the author was employed during the study). The second and third lines of the author's address are indented 5 spaces. Use available U.S. Postal Service (USPS) abbreviations (Appendix A), zip codes, and the country abbreviation (e.g., USA), in each address. Write out words like Street, Avenue, and Boulevard but abbreviate directions (e.g., N. and N.W.). For multiple authors with the same address, repeat the address after each author's name.

FOOTNOTES

Footnotes appear at the bottom of the first page to reference present address of an author when it differs from the by-line address, and for E-mail address of the corresponding author. Footnotes also may be used to indicate a deceased author. The footnote appears immediately below a left-justified solid line of 10 characters, and each footnote is indented 5 spaces and starts with a numerical superscript; subsequent lines are left-justified. The footnote origin corresponds to the superscript number following the author's name. Endorsement disclaimers and pesticide warnings should be incorporated in the text. For table footnotes, see the TABLES section.

ABSTRACT

Begin with the word “Abstract” in italic and bold fonts followed by a colon, and left-justified. The Abstract text begins after the colon on the same line, and should be a single paragraph not exceeding 1 line/page of text, including LITERATURE CITED. The Abstract should include:

Problem Studied or Hypothesis Tested.--Identify the problem or hypothesis and explain why it was important. Indicate new data, concepts, or interpretations directly or indirectly used to manage wildlife.

Results.--Emphasize the most important results, positive or negative, but keep the methods brief unless a new or much-improved method is reported.

Utility of Results.--Explain how, when, where, and by whom data or interpretations can be applied to wildlife problems or contribute to knowledge of wildlife science.

On the line following the Abstract, type *“JOURNAL OF WILDLIFE MANAGEMENT 00(0):000-000"* right-justified and in capital letters, bold font, and italics (see page 1 of this manuscript).

KEY WORDS

Key words follow the Abstract. The phrase “Key words” is typed in italic and bold fonts followed by a colon, left-justified, and followed by 10-12 key words in alphabetical order. Include some words from the title and others that identify (1) common and scientific names of principal organisms in the manuscript; (2) geographic area, usually the state, province, or equivalent, or region if its name is well known; (3) phenomena and entities studied (e.g., behavior, populations, radiotelemetry, habitat, nutrition, density estimation, reproduction); (4) methods--only if the manuscript describes a new or improved method; and (5) other words not covered above but useful for indexing. Type a solid line from the left to the right margin beneath the key words; begin the text below this line.

HEADINGS AND MAJOR SECTIONS

Headings

Three levels of headings may be used and examples of each appear in this manuscript. First-level headings are in upper-case letters, are left-justified, and in bold type. Second-level headings also are bold type and left-justified, but only the first letter of each word (except articles, conjunctions, and prepositions) is upper-case. Third-level headings have the first letter of each word upper-case, but are indented 5 spaces, italicized, and followed by a period and 2 hyphens. Although short papers (≤4 pages) may not require any headings, most require at least first-level headings. Under a first-level heading, use only third-level headings if all subsections are short (≤2 paragraphs; e.g., see Abstract section of this manuscript). Avoid repeating exact wording of the heading with second- and third-level headings. Do not leave first- or second-level headings standing alone on the last line of a page (i.e., as a "widow line"), and avoid 1-sentence paragraphs.

Major Sections

The introduction (no heading) starts below the line under key words and is a concise synthesis of literature specific to the manuscript's main topic. The latter part of this section states objectives or hypotheses tested.

Most *JWM* manuscripts have 8 major sections: introduction, STUDY AREA, METHODS, RESULTS, DISCUSSION, MANAGEMENT IMPLICATIONS, ACKNOWLEDGMENTS, and LITERATURE CITED. It is permissible to combine STUDY AREA and METHODS, but do not combine RESULTS and DISCUSSION. Merging these sections so that results can be interpreted when first presented leads to superfluous wording, unnecessary discussion, and confusion.

Most study-area descriptions should be presented in past tense; e.g., "average annual precipitation was 46 cm," "habitat was primarily grass." Exceptions include geological formations that have been present for centuries. Methods should be brief and include dates,

sampling schemes, duration, research or experimental design, and data analyses. Previously published methods should be cited without explanation. New or modified methods should be identified as such and explained in detail. Many research projects require animal-welfare protocols, and these should be cited here. If an approval number for the protocol was necessary, list it parenthetically following the statement.

Present results in a clear, simple, concise, and organized fashion. Avoid overlapping text with information in tables and figures; do not explain analyses that should be presented in the METHODS section. Results should be presented in past tense (e.g., body-mass loss occurred during winter). Reserve interpretation comments for the DISCUSSION section.

The discussion provides an opportunity for interpreting data and making literature comparisons. Reasonable speculation and new hypotheses to be tested may be included in the DISCUSSION. Do not repeat results and comment only on the most important findings. Systematic discussion of every aspect of the research leads to unnecessarily long manuscripts.

The MANAGEMENT IMPLICATIONS section should be short and direct, but explain issues important to conservation. This section may include speculation, but should address specific management opportunities or problems.

STYLE AND USAGE

Manuscripts with publishable data may be rejected because of poor writing style (e.g., long and complex sentences, superfluous words [Table 1], unnecessary information, and poor organization). Most editors are patient with this problem and are willing to offer helpful suggestions. However, referees are less tolerant of poor writing, and this problem may lead to negative reviews. Many of these problems can be corrected by having your manuscript critically reviewed by colleagues before submission for publication. Authors are urged to review Chapters 3 and 4 in the “CBE Style Manual” (CBE Style Manual Committee 1994) and “Writing with Precision, Clarity, and Economy” by Mack (1986). Manuscripts should be direct and concise.

Many common problems may be avoided by use of a carefully prepared outline to guide manuscript writing. Other helpful suggestions are presented by Strunk and White (1979), Day (1983), and Batzli (1986). Use first person and active voice whenever appropriate to avoid superfluous wording. Review the list of commonly misused words (Table 2) before preparing your manuscript (e.g., use the word "mass" rather than "weight" to conform to international standards).

Numbers and Unit Names.--Use digits for numbers (e.g., 7 and 45) unless the number is the first word of a sentence, where it is spelled out. Use symbols or abbreviations (e.g., % and kg) for measurement units that follow a number unless the number is indefinite (thousands of hectares), is a "0" (zero) standing alone, or is the first word in a sentence. In such cases spell out the number and unit name or recast the sentence. Avoid using introductory phrases such as "A total of ... ." Spell out numbers used as pronouns (i.e., one) or adverbs and ordinal numbers (e.g., first and second). However, use digits for cases such as 3-fold and 2-way. Convert fractions (1/4, 1/3, etc.) to decimals except where they misrepresent precision.

Hyphenate number-unit phrases used as adjectives (e.g., 3-m^2 plots and 3-year-old males), but not those used as predicate adjectives (e.g., plots were 3 m^2). Insert commas in numbers $\geq$1,000 (except for pages in books, clock time, or year dates). Do not insert a comma or hyphen between consecutive, separate numbers in a phrase (28 3-m^2 plots). Do not use naked decimals; i.e., use 0.05, not .05.

Time and Dates.--Use the 24-hr system: 0001 through 2400 hr (midnight). Date sequence is day month year, without punctuation. Do not use an apostrophe for plural dates (e.g., 1970s). Spell out months except in parentheses, tables, and figures, in which 3-letter abbreviations are used with no period (e.g., 31 Mar 1947, Appendix B).

Mathematics and Statistics.--Use italic font for Roman letters used as symbols for quantities (e.g., n, $\bar{x}$ F, t, Z, P, and X). Do not underline or italicize numbers, Greek letters, names of trigonometric and transcendental functions, or certain statistical terms (e.g., ln, e, exp, max, min, lim, SD, SE, CV, and df). Use bold font for items that should be set in boldface type.

Insert a space on both sides of symbols used as conjunctions (e.g., $P > 0.05$), but close the space when used as adjectives (e.g., >20 observations). Where possible, report exact probabilities ($P = 0.057$, not $P > 0.05$). A subscript precedes a superscript (X_i^{3}) unless the subscript includes >3 characters. Break long equations for column-width printing (67 mm) if they appear in the main body of the manuscript; long equations and matrices can be printed page-width (138 mm) in appendices. Swanson (1974) or the CBE Style Manual Committee (1994:206-218) should be followed for general guidance, and MacInnes (1978) for advice on presentation of statistics. Authors are urged to read Tacha et al. (1982) and Wang (1986) for reviews of common statistical errors. Authors should consider statistical power when judging their results (*JWM* 59:196-198).

Abbreviations and Acronyms.--Metric units, their appropriate prefixes, and abbreviations identified by an asterisk in Appendix B may be used in the text. All other abbreviations or acronyms (except DNA) used in the Abstract or text must be defined the first time used; e.g., Bureau of Land Management (BLM). Acronyms established in the Abstract should not be reestablished in the text. Do not start sentences with acronyms; do not use an apostrophe with plural acronyms (e.g., ANOVAs). All abbreviations in Appendices A and B may be used within parentheses.

Punctuation.--Use a comma after the next-to-last item in a series of ≥3 items (e.g., red, black, blue). Do not hyphenate prefixes, suffixes, or combining forms unless necessary to avoid confusion. Common hyphenation errors occur in 3 cases: (1) a phrase containing a participle or an adjective is hyphenated as a compound when it precedes the word modified, and is written

without a hyphen when it follows the word modified (e.g., a small-bird study vs. a study of small birds); (2) a modifier containing a number is usually hyphenated (e.g., a 6-year-old mammal); and (3) a 2-word modifier containing an adverb ending in *ly* is not hyphenated (e.g., a carefully preserved specimen).

Closing quotation marks are placed after periods and commas, but may be placed either before or after other punctuation (CBE Style Manual Committee 1994:177-181). Fences must appear in pairs, but the sequence varies. Use ([]) in ordinary sentences, use {[()]} in mathematical sentences, and use (()) only in special cases such as chemical names. Brackets are used to enclose something not in the original work being quoted (e.g., insertion into a quotation or a translated title [CBE Style Manual Committee 1994:58-59]).

Enumerating Series of Items.--When enumerating series, a colon must precede the numbered items unless preceded by a verb or preposition. Place numbers within parentheses for presentation of a simple series (e.g., Key words section of this manuscript). When enumerating lengthy or complexly punctuated series, place the numbers at the left margin, with periods but no parentheses, and indent run-on lines (see example in Tables subsection below).

COMMON AND SCIENTIFIC NAMES

Do not capitalize common names of species except words that are proper names (e.g., Canada goose [*Branta canadensis*], Swainson's hawk [*Buteo swainsoni*], white-tailed deer [*Odocoileus virginianus*]). Scientific names should follow the first mention of a common name, except in the title. If a scientific name is given in the Abstract, do not repeat it in the text or tables. Scientific names following common names should be in italic font in parentheses with the first letter of the genus upper-case and the species name in lower-case letters. Abbreviate genus names with the first letter when they are repeated within a few paragraphs, provided the meaning is clear and cannot be confused with another genus mentioned in the manuscript with the same first letter; e.g., we studied snow geese (*Chen caerulescens*) and Ross' geese (*C. rossii*).

Do not use subspecies names unless essential and omit taxonomic authors names. Use "sp." (not italicized) to indicate unknown species. Use "spp." for multiple species; e.g., the field was bordered by willow (*Salix* spp.). Use the most widely accepted nomenclature where disagreement occurs. Use the most current edition of The American Ornithologists' Union Check-list (e.g., 1997) and periodic supplements published in *Auk* as general references for North American birds. For mammals, use Nowak (1991) or Whitaker (1996). There is no single reference for North America plants; we recommend citing the most widely accepted regional flora reference (e.g., in northwestern states, Hitchcock and Cronquist 1973). Omit scientific names of domesticated animals or cultivated plants unless a plant is endemic or widely escaped from cultivation, or is a variety that is not described adequately by its common name.

MEASUREMENT UNITS

Use Systeme Internationale d'Unites (SI) units and symbols. Use English units (or another type of scientific unit) in parentheses following a converted metric unit only in cases that may misrepresent (1) the statistical precision of the original measurement or (2) the correct interpretation of the results. However, these non-SI units are permitted:

area -- hectare (ha) in lieu of 10^4 m^2;

energy -- calorie (cal) in lieu of Joule (J);

temperature -- Celsius (C^o) in lieu of Kelvin (K);

time -- minute (min), hour (hr), day, etc. in lieu of seconds (sec);

volume -- liter (L) in lieu of dm^3.

The CBE Style Manual Committee (1994:200-205) provided definitions of SI units and prefixes. The American Society of Testing Materials (1979) included many conversion factors.

CITING LITERATURE IN TEXT

In most cases, reference citations parenthetically at the end of a sentence; e.g., mallard-brood survival was higher in the wettest years (Rotella 1992). Published literature is cited by

author and year; e.g., Jones (1980), Jones and White (1981). With ≥3 authors use "et al."; e.g., (Jones et al. 1982). Do not separate the author and date by a comma, but use a comma to separate a series of citations and put these in chronological order; e.g., (Jones 1980, Hanson 1986). If citations in a series have >1 reference for the same author(s) in the same year, designate the years alphabetically (in italics) and separate citations with semicolons; e.g., (Jones 1980*a,b*; Hanson 1981; White 1985, 1986). For citations in a series with the same year, use alphabetical order within chronological order; e.g., (Brown 1991, Monda 1991, Rotella 1991, Allen 1995). Do not give more than 6 citations in the text to reference a specific issue or scientific finding. For a quotation or paraphrase, cite author, year, colon, and page number(s); e.g., we used Neyman allocation to minimize variance (Krebs 1989:216). Use the same style for a book or other lengthy publication unless the reference is to the entire publication; e.g., Odum (1971:223).

Cite documents that are cataloged in major libraries, including theses and dissertations, as published literature. These citations include symposia proceedings and U.S. Government reports that have been widely distributed. However, cite such references as unpublished if they are not easily available. Cite unpublished information in the following forms: (J. G. Jones, National Park Service, personal communication), (D. F. Brown, Arizona Game and Fish Department, unpublished data), (D. E. Timm. 1977. Annual Waterfowl Report, Alaska Department of Fish and Game, Juneau, Alaska, USA).

A manuscript accepted for publication is cited as a published manuscript in the text using the anticipated publication year. In the LITERATURE CITED, show the year after the name(s) of the author(s) and "In Press" after the volume number (see below). Do not cite manuscripts that are in review; use the unpublished style.

LITERATURE CITED STYLE

Type the citations double-spaced immediately following the text, not necessarily on a new page. Spell out all words in cited literature, i.e., do not use abbreviations. However, the

following 3 exceptions are allowed: Washington D.C.; “U.S.,” e.g., U.S. Department of Agriculture, and “USA” in author and publisher addresses. Alphabetize by author’s surname(s), regardless of the number of multiple authors for the same publication. Within alphabetical order the sequence is chronological. Use upper- and lower-case letters (typing all capital letters complicates editing names such as DeGraaf and vanDruff). Use 2 initials (where appropriate) with 1 space between each initial. For multiple citations with the same author(s), use a 5-spaced line to replace the author’s name(s) after the first citation. For serial publications, show the issue number only if the pages of each issue are numbered separately. As in the text, spell out ordinal numbers (e.g., Third edition). Use the word Thesis to denote Master of Science (M.S.) or Master of Arts (M.A.), and Dissertation for Doctor of Philosophy (Ph.D.). Do not write the total page number of books at the end of citations. Omit unnecessary words, but do not remove a conjunction if the meaning may be changed (e.g., Game and Fish vs. Game Fish). For publishers, do not include words like Company, Incorporated, Limited, or Publishing (e.g., Macmillan, not Macmillan Publishing Company). Please review the following examples.

Book -- More than 1 Edition

Smith, R. L. 1974. Ecology and field biology. Second edition. Harper & Row, New York, New York, USA.

Book -- More than 1 Volume

Palmer, R. S. 1976. Handbook of North American birds. Volume 2. Yale University Press, New Haven, Connecticut, USA.

Book -- Editor as Author

Temple, S. A., editor. 1978. Endangered birds: management techniques for preserving threatened species. University of Wisconsin Press, Madison, Wisconsin, USA.

Chapter Within Book

Zeleny, L. 1978. Nesting box programs for bluebirds and other passerines. Pages 55-60 *in* S. A. Temple, editor. Endangered birds: management techniques for preserving threatened species. University of Wisconsin Press, Madison, Wisconsin, USA.

Theses or Dissertations

Tacha, T. C. 1981. Behavior and taxonomy of sandhill cranes from mid-continental North America. Dissertation, Oklahoma State University, Stillwater, Oklahoma, USA.

Journals -- General Format

Miller, M. R. 1986. Molt chronology of northern pintails in California. Journal of Wildlife Management 50:57-64.

Journals in Press -- Year and Volume Known

Zelenak, J. R., and J. J. Rotella. 1997. Nest success and productivity of ferruginous hawks in northern Montana. Canadian Journal of Zoology 75:in press.

Journals in Press -- Year and Volume Unknown

Giudice, J. H., and J. T. Ratti. In Press. Biodiversity of wetland ecosystems: review of status and knowledge gaps. BioScience.

Symposia and Proceedings -- Complete Volume

DeGraaff, R. M., technical coordinator. 1978. Proceedings of workshop on management of southern forests for nongame birds. U.S. Forest Service General Technical Report SE-14.

Symposia and Proceedings -- Individual Article

Dickson, J. G. 1978. Forest bird communities of the bottomland hardwoods. Pages 66-73 *in* R. M. DeGraaf, technical coordinator. Proceedings of workshop on management of southern forests for nongame birds. U.S. Forest Service General Technical Report SE-14.

Symposia and Proceedings -- Part of a Numbered Series

Palmer, T. K. 1976. Pest bird control in cattle feedlots: the integrated system approach. Proceedings of the Vertebrate Pest Conference 7:17-21.

Multiple Citations of the Same Author(s)

Peek, J. M. 1963. Appraisal of a moose range in southwestern Montana. Journal of Range Management 16:227-231.

_____. 1986. A review of wildlife management. Prentice-Hall, Englewood Cliffs, New Jersey, USA.

_____, and A. L. Lovaas. 1968. Differential distribution of elk by sex and age on the Gallatin winter range, Montana. Journal of Wildlife Management 32:553-557.

_____, _____, and R. A. Rouse. 1967. Population changes within the Gallatin elk herd, 1932-1965. Journal of Wildlife Management 31:304-316.

_____, and R. A. Rouse. 1966. Preliminary report on population changes within the Gallatin elk herd. Wildlife Science 82:1298-1316. (Note: fictitious citation used for example only.)

Government Publication

Lull, H. W. 1968. A forest atlas of the Northeast. U.S. Forest Service, Northeastern Forest Experiment Station, Upper Darby, Pennsylvania, USA.

Government Publication -- Part of a Numbered Series

Anderson, D. R. 1975. Population ecology of the mallard: V. Temporal and geographic estimates of survival, recovery, and harvest rates. U.S. Fish and Wildlife Service Resource Publication 125.

Government Publication -- Agency as Author

National Research Council. 1977. Nutrient requirements of poultry. Seventh edition. National Academy of Science, Washington, D.C., USA.

Note: Cite in text as National Research Council (1977). For additional examples, see the LITERATURE CITED section of this manuscript.

TABLES AND FIGURES

Submit only essential tables and figures. Often tables overlap with presentation in the text, or the information can be easily printed in the text with less journal space. Do not present the same data in a table and a figure. Number tables and figures independently. In the text limit reference of tabular data to highlights of the most important information. Reference tables and figures parenthetically, and avoid statements such as "The results are shown in Tables 1-4." Prepare line drawings only for data that cannot be presented as clearly in a table. For general guidance follow CBE Style Manual Committee (1994:677-693).

Tables and figures should be able to stand alone (e.g., self-explanatory). Avoid reference to the text, and be sure the title includes the species or subject of the data, and where and when data were collected. In rare cases, titles or footnotes of tables and figures may be cross-referenced to avoid repeating long footnotes or the same data. However, this violates the "self-explanatory" rule and should be avoided.

Tables

Do not prepare tables for small data sets, those containing many blank spaces, zeros, repetitions of the same number, or those with few or no significant data. Put such data or a summary in the text. Day (1983) presents a practical discussion of tables.

For data that must be shown in a table, items that provide the most important comparisons usually read vertically, not horizontally. Construct tables for column-width (67 mm) printing. If the table will not fit in 1 column width, construct it for page-width printing not wider than 23 cm

(9 inches). Some extra-wide tables can be printed vertically (e.g., *JWM* 50:192, 51:461), but such tables usually waste space. Extra-long and extra-wide tables require justification from the author.

Table titles may vary, but we recommend this sequence: (1) name of the characteristic that was measured (e.g., mass, age, density), (2) measurement unit or units in parentheses (e.g., cm, No./ha, M:100 F, or %), (3) name of organism or other entity measured (e.g., "of Canada geese"), and (4) location and date. Each part of the sequence can include >1 item (e.g., "Carcass and liver fat [%] and adrenal and kidney weight [mg] of white-tailed deer in Ohio and Michigan, 1975)."

Avoid beginning the title with superfluous words (e.g., The, Summary of, and Comparisons between) and words that can be presented parenthetically as symbols or abbreviations (e.g., %). Symbols such as *n* and % in the title seldom need repetition in table headings. Do not use abbreviations in table title, except within parentheses. However, use standard abbreviations and symbols (Appendix B) in the table body and in footnotes.

The lines printed in tables are called "rules," and *JWM* standards are

1. None drawn vertically within the table.
2. Three rules across the entire table: below the title, below the column headings, and at the bottom. Type each as a single, continuous line.
3. Use rules that straddle subheadings within the column heading (e.g., *JWM* 50:48).
4. None to show summation; use "Total" or equivalent in the row heading.
5. Do not use rules to join the means in multiple-range tests. Use Roman upper-case letters instead of rules (e.g., 12.3A[a], 16.2A, 19.5B) where the superscript "a" references a footnote such as "[a]Means with the same letters are not different ($P > 0.10$)" (e.g., *JWM* 50:22). Upper-case letters may be used in a similar fashion to reference the relationship of data among columns (e.g., *JWM* 50:371).

In column headings use straddle rules liberally to join related columns and reduce wordage (e.g., *JWM* 50:31). Label columns to avoid unnecessary print in the data field. For example, instead of "$\bar{x} \pm SE$," label $\bar{x}$ and SE separately so that $\pm$ need not be printed. Similarly, label sample size columns "*n*" instead of using numbers in parentheses in the data field.

Keep column- and row-heading words out of the data field. Type main headings flush left, and indent their subheadings (e.g., *JWM* 50:86). In the data field, do not use dashes (often misused to mean "no information") or zeros unless the item was measured, and 0, 0.0, or 0.00 correctly reports the precision. Similarly, respect digit significance in all numbers, particularly percentages. Do not use percentages where *n* is <26, except for 1 or 2 samples among several others where *n* is >25. Where the number of significant digits varies among data in a column, show each datum at its precision level; i.e., do not exaggerate precision. For *P* values only use 3 digits past the decimal and do not list $P = 0.000$; the correct form is $P \leq 0.001$.

For footnote superscripts use asterisks for probability levels and lower-case Roman (not italic) letters for other footnotes. Use this sequence for placing letters alphabetically: in the title, then left-to-right, and then down. Make certain that each footnote character in the title and table matches an explanation that is indented below the table. Left justify run-on lines of footnotes. Footnotes may be used to reduce cluttering the title and table with details. The most common errors in tables are single spacing, incomplete titles, naked decimal points, and ambiguous or unnecessary characters in the data field.

Figures

Most figures are either line (or computer) drawings or pictures ("picture" is used to distinguish scene or object photographs from photos of drawings). If possible, photographic prints should not exceed 20 x 25 cm. Submit 4 prints of a picture; for drawings submit either 4 prints or 1 print and 3 photographic copies. Retain original drawings to guard against loss or

damage. Consult Allen (1977), Day (1983), and the CBE Style Manual Committee (1994:693-699) for additional guidance.

Type all figure captions on 1(or more) page(s). On the back of each figure lightly print (in soft pencil) the senior author's name, figure number, and "Top." Figure titles tend to be longer than table titles because figures are not footnoted. The title may be several sentences and include brief suggestions for interpreting the figure content.

Pictures.--Few pictures are accepted. They must have sharp focus, have high tonal contrast, a reference scale if size is important, a glossy finish, and must be unmounted. Letters, scales, or pointers can be drawn on the prints, but they must be of professional quality. Sets of 2-4 related pictures can be mounted as 1 figure if prints are the same width and will fit in a space 67 x <170 mm when reduced for printing. Label prints A, B, C, D or use "Top," etc., for reference in the figure title. Cropping improves composition of most pictures, but do not put crop marks on prints. Instead, put them on xerographic copies or sketches. Do not submit color prints unless you are able to pay for printing at approximately $1,200/plate (as of 1997).

Line Drawings.--Consider whether a drawing can be printed column width (67 mm) or is so detailed that it must be printed page width (138 mm). The difference depends mainly on size of characters and lengths of legends drawn on the figure. If page width is necessary, consider omitting some of the detail and look for ways to shorten legends. Column-width figures are preferred (e.g., *JWM* 50:145).

Before revising the first sketch, determine the minimum height for letters, numbers, and other characters, which must be $\geq$1.5 mm tall after reduction for printing. Determine width in millimeters for the revised sketch. To determine the minimum height (mm) for characters, multiply the width by 0.0224 for column-width printing or 0.0109 for page-width printing. If in doubt as to printed width, use the column-width multiplier. The product is the minimum height in millimeters. Plan to use at least the next larger character height available. Hand-drawn lines and

lettering and typewriter characters are not acceptable. We recommend professionally prepared line drawings. Lettering from modern personal computer graphics software and printers is acceptable.

For axis labels, use lower-case or italic letters where they are essential to the meaning, as in mathematical terms and most metric units (see subsection on Mathematics and Statistics and Appendix B). Otherwise use upper- and lower-case letters, which are more legible when reduced. Identify arbitrary symbols by legend within the figure (preferred) or, for those normally available to the printer (e.g., CBE Style Manual Committee [1994:693-699]), in the figure title.

TRANSMITTAL LETTER AND SUBMISSION

Check the most recent issue of the *JWM* for the name and address of the Editor in Chief. Send the manuscript with a transmittal letter that indicates you are submitting exclusively to the *JWM* and that no part of the manuscript has been published or is being considered for publication elsewhere. If any portion of the manuscript has been published or reported elsewhere, or if the manuscript relates to but does not duplicate other publications or manuscripts by the same authors, send 4 copies of each to assist referees and editors in assessing the submitted manuscript.

Theses and Dissertations do not constitute prior publication and need not be mentioned in the letter, but they should be cited in the manuscript. Similarly, abstracts of talks given at meetings do not constitute prior publication. Generally, unpublished reports that were required by sponsors and that were not distributed as part of a numbered series (or in other ways that might result in accession by libraries) do not constitute prior publication. Symposia proceedings are considered publications. Provide information that bears on ethical and copyright considerations and any other information that might facilitate review and editing.

REVIEW PROCESS

Manuscripts are submitted to the Editor in Chief who selects a minimum of 2 referees from *JWM* files and personal knowledge. The *JWM* has a board of Associate Editors (AE), each with

specialized knowledge of subject areas. The manuscript is mailed to the referees and an appropriate AE. Referees are instructed to return their comments to the AE, who usually takes 1 of 2 actions after assessing the manuscript and review comments: (1) the manuscript is returned to the author(s) with suggestions for revision, or (2) the manuscript is rejected and the file is returned to the Editor in Chief (in both cases the author receives a copy of the review comments). If the manuscript was returned to the author(s) for revision, the revised manuscript is reviewed again by the AE and either rejected, or returned to the Editor in Chief with a recommendation for acceptance. Sometimes the revision process requires several iterations before the AE makes a final decision.

A third referee may be selected if the editors feel it is necessary, (e.g., if referees differ widely in their opinions). Manuscripts returned to authors for revision must be returned to the AE within 6 months or the manuscript will be rejected, requiring resubmission. Final acceptance of manuscripts is decided by the Editor in Chief. Typically, the Editor in Chief follows the AE recommendation. However, the Editor in Chief may reconsider manuscripts that have been rejected or recommended for acceptance by an AE. Reconsideration of a rejected manuscript usually requires a convincing rebuttal letter from the authors.

For accepted manuscripts, authors are required to submit the final draft on diskette in word processor format (include text, followed by tables, and figure titles). Allen Press will typeset directly from the diskette; thus, incorporation of all final editorial changes is essential. Most word processor formats are acceptable; please label your diskette with operating system name and word processor format, including the version number.

The time between submission and final decision to accept or reject a manuscript averages 3-6 months, but varies from 3 to 20 months depending upon the number of revisions required and the time manuscripts are held by referees and authors. Manuscripts seldom are delayed in either

editorial office more than 2-3 weeks during the review process. After acceptance, manuscripts usually are printed within 9-12 months.

ACKNOWLEDGMENTS

This section appears immediately before the LITERATURE CITED, should be brief, and include both initials (where appropriate) and the last name of individuals acknowledged. Acknowledgments should be straightforward without qualifying adjectives. We thank G. A. Baldassarre, M. S. Boyce, C. E. Braun, H. E. Hodgdon, R. L. Lee, and M. M. Kirsch for review comments. G. C. White assisted with revision of the mathematics and statistics subsection. Portions of this manuscript have been extracted from Gill and Healy (1980) and Ratti and Ratti (1988) with permission of The Wildlife Society. This is Contribution 836, University of Idaho Forest, Wildlife, and Range Experiment Station. L. M. Smith was supported by the Caesar Kleberg Foundation for Wildlife Conservation.

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(**Note:** Many citations that were used in the guidelines text as examples do not appear in the LITERATURE CITED section above.)

(Immediately below the LITERATURE CITED section type the following in italics:)

Received .

Accepted .

Associate Editor: .

Table 1. Common expressions with superfluous words.[a]

Superfluous wording	Suggested substitute
the purpose of this study was to test the hypothesis	I (or we) hypothesized
in this study we assessed	we assessed
we demonstrated that there was a direct	we demonstrated direct
were responsible for	caused
played the role of	were
on the basis of evidence available to date	consequently
in order to provide a basis for comparing	to compare
as a result of	through, by
for the following reasons	because
during the course of this experiment	during the experiment
during the process of	during
during periods when	when
for the duration of the study	during the study
the nature of	(omit by rearrangement)
a large (or small or limited) number of	many (or few)
conspicuous numbers of	many
substantial quantities	much
a majority	most
a single	one
an individual taxon	a taxon

Table 1. Continued.

Superfluous wording	Suggested substitute
seedlings, irrespective of species	all seedlings
all of the species	all species
various lines of evidence	evidence
they do not themselves possess	they lack
were still present	persisted, survived
the analysis presented in this paper	our analysis
indicating the presence of	indicating
despite the presence of	despite
checked for the presence of	checked for
in the absence of	without
a series of observations	observations
may be the mechanism responsible for	may have caused
it is reasonable to assume that where light is not limiting	with light not limiting
in a single period of a few hours	in a few hours
occur in areas of North America	are in North America
adjacent transects were separated by at least 20 m	≥20 m apart
in the vicinity	nearby
separated by a maximum distance of 10 m and a minimum distance of 3 m	3-10 m apart

Table 1. Continued.

Superfluous wording	Suggested substitute
the present-day population	the population
their subsequent fate	their fate
whether or not	whether
summer months	summer
are not uncommon	may be
due to the fact that	(omit by rearrangement)
showed a tendency toward higher survival	had higher survival
devastated with drought-induced desiccation	killed by drought

[a]Mack (1986:33). Reprinted with permission from the Ecological Society of America.

Table 2. Words that commonly need correction in *Journal of Wildlife Management* manuscripts.[a]

Word and proper usage
accuracy (see precision): extent of correctness of a measurement or statement.
affect (see effect): verb, to cause a change or an effect; to influence.
among (see between): use in comparing >2 things.
between (see among): use in comparing only 2 things.
cf.: compare
circadian: approximately 24 hours.
continual: going on in time with no, or with brief, interruption.
continuous: going on in time or space without interruption.
diurnal: recurring every 24 hours; occurring in daylight hours.
effect (see affect): usually a noun, the result of an action; as an adverb (rare), to bring about or cause to exist, or to perform.
e.g. (see i.e.): for example.
enable (see permit): to supply with means, knowledge, or opportunity; to make possible.
ensure (see insure): to make certain or guarantee.
farther: more distant in space, time, or relation.
further: going beyond what exists, to move forward.

Table 2. Continued.

Word and proper usage
i.e. (see e.g.): that is.
incidence (see prevalence): number of cases developing per unit of population per unit of time.
insure (see ensure): to assure against loss.
livetrap: verb.
live trap: noun.
logistic: symbolic logic.
logistics: operational details of a project or activity.
mass (see weight): proper international use for measures of mass.
ovendry: adjective.
oven-dry: verb.
percent: adjective, adverb, or noun. Spell out only when the value is spelled out or when used as an adjective. Use “%” with numerals.
percentage: noun, part of a whole expressed in hundredths; often misused as an adjective, e.g., percent error, not percentage error.
permit (see enable): to allow, to give formal consent.
precision (see accuracy): degree of refinement with which a measurement is made or stated; e.g., the number 3.43 shows more precision than 3.4, but is not necessarily more accurate.
prevalence (see incidence): number of cases existing per unit of population at a given time.

Table 2. Continued.

Word and proper usage
sensu: as understood or defined by; used in taxonomic reference.
since: from some past time until present; not a synonym for “because” or “as.”
presently: in the future, not synonymous with “at present” or “currently.”
that (see which): pronoun introducing a restrictive clause (seldom preceded by a comma).
usage: firmly established and generally accepted practice or procedure.
utilization, utilize: avoid by using “use” instead.
various: of different kinds.
varying: changing or causing to change. Do not use for different.
very: a vague qualitative term; avoid in scientific writing.
weight (see mass): should seldom be used.
viz: namely.
which (see that): pronoun introducing a nonrestrictive clause (often preceded by a comma or preposition [for, in, or of which]); the word most often misused in *JWM* manuscripts.
while: during the time that. Use for time relations but not as synonym for “whereas,” “although,” and “similarly,” which do not imply time.

[a]Adapted in part from CBE Style Manual Committee (1994:123-125); also see Day (1983:123-125).

Appendix A. Abbreviations for United States and Canadian political units. Spell out geographic locations given parenthetically in the text or in the LITERATURE CITED, but use ANSI abbreviations in tables, figures, and footnotes. Use U.S. Postal Service (USPS) abbreviations only in addresses with zip codes (e.g., author addresses). A blank means do not abbreviate.

Unit	ANSI	USPS
U.S. and territories		
Alabama	Ala.	AL
Alaska	Alas.	AK
American Samoa	Am. Samoa	AS
Arizona	Ariz.	AZ
Arkansas	Ark.	AR
California	Calif.	CA
Canal Zone		CZ
Colorado	Colo.	CO
Connecticut	Conn.	CT
Delaware	Del.	DE
District of Columbia	D.C.	DC
Florida	Fla.	FL
Georgia	Ga.	GA
Guam		GU
Hawaii	Haw.	HI
Idaho	Id.	ID
Illinois	Ill.	IL
Indiana	Ind.	IN
Iowa	Ia.	IA
Kansas	Kans.	KS
Kentucky	Ky.	KY
Louisiana	La.	LA
Maine	Me.	ME
Maryland	Md.	MD
Massachusetts	Mass.	MA
Michigan	Mich.	MI
Minnesota	Minn.	MN
Mississippi	Miss.	MS
Missouri	Mo.	MO
Montana	Mont.	MT
Nebraska	Nebr.	NE
Nevada	Nev.	NV
New Hampshire	N.H.	NH
New Jersey	N.J.	NJ
New Mexico	N.M.	NM
New York	N.Y.	NY
North Carolina	N.C.	NC
North Dakota	N.D.	ND
Ohio	Oh.	OH
U.S. and territories (continued)		
Oklahoma	Okla.	OK
Oregon	Oreg.	OR
Pennsylvania	Pa.	PA
Puerto Rico	P.R.	PR
Rhode Island	R.I.	RI
South Carolina	S.C.	SC
South Dakota	S.D.	SD
Tennessee	Tenn.	TN
Texas	Tex.	TX
Trust Territory Trust	Territ.	TT
Utah	Ut.	UT
Vermont	Vt.	VT
Virginia	Va.	VA
Virgin Islands	V.I.	VI
Washington	Wash.	WA
West Virginia	W.Va.	WV
Wisconsin	Wis.	WI
Wyoming	Wyo.	WY
Canadian provinces and territories		
Alberta	Alta.	AB
British Columbia	B.C.	BC
Manitoba	Manit.	MB
New Brunswick	N.B.	NB
Newfoundland	Newf.	NF
Northwest Territories	Northwest Territ.	NT
Nova Scotia	N.S.	NS
Ontario	Ont.	ON
Prince Edward Island	Prince Edward Isl.	PE
Quebec	Que.	PQ
Saskatchewan	Sask.	SK
Yukon Territory	Yukon Territ.	YT
Other		
United States	USA	
New Zealand	N.Z.	
United Kingdom	U.K.	

Appendix B. Abbreviations commonly used in *Journal of Wildlife Management* tables, figures, and parenthetic expressions. Only those metric units and their appropriate prefixes (CBE Style Mananul Committee 1994:202-205, 206-218) identified with an asterisk may be abbreviated in the text. A blank means do not abbreviate.

Term	Abbreviation or symbol	Term	Abbreviation or symbol
Adult	ad	Logarithm, base e	*ln or $\log_e$
Amount	amt	Logarithm, base 10	*$\log_{10}$
Approximately	approx	Male	M
Average	$\bar{x}$	Maximum	
Calorie	*cal	Meter	*m
Celsius	*C^o	Metric Ton	t
Chi-squared	χ^2	Minimum	
Coefficient	coeff	Minute	*min
Coefficient of		Month	
correlation, simple	*r*	Month names	Jan, Feb, etc.
multiple	*R*	More than	*>
determination, simple	r^2	Number (of items)	No.
multiple	R^2	Observed	obs
variation	CV	Outside diameter	o.d.
Confidence interval	CI, a $\leq \bar{x} \leq$ a	Parts per billion	*ppb
	Or $\bar{x} \pm$ a	Parts per million	*ppm
Day		Percent	*%
Degrees of freedom	df	Population size	*N*
Diameter	diam	Probability	*P*
Diameter, breast height	dbh	Range	
Equation(s)	eq(s)	Sample size	*n*
Expected	Exp	Second	*sec
Experiment	exp.	Spearman rank correlation	r_s
Female	F	Square	sq
F ratio	*F*	Standard deviation (*s*)	SD
Gram	*g	Standard error ($s_{\bar{x}}$)	SE
Gravity	*g*	Student's *t*	*t*
Hectare	*ha	Temperature	temp
Height	ht	Trace[a]	tr
Hotelling's T^2	T^2	Versus	vs.
Hour(s)	*hr	Volt	*V
Inside diameter	i.d.	Volume: liquid, book	vol, Vol.
Joule	*J	Watt	*W
Juvenile	juv	Week	
Kilocalorie	*kcal	Weight	wt
Lethal dose, median	LD_{50}	Wilcoxon test	*T*
Less than	*<	Year	yr
Limit	lim	*z*-statistic	*z*
Liter	*L		

[a]Define in a footnote (e.g., tr = <1%).