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JOURNAL OF AQUATIC ANIMAL HEALTH

Guide for Authors

Editorial Policy

The *Journal of Aquatic Animal Health* serves the North American and international communities of scientists concerned with the health of aquatic organisms. We encourage the submission of papers dealing with the causes, effects, treatments, and prevention of diseases of marine and freshwater organisms, particularly fish and shellfish. We also welcome manuscripts describing biochemical and physiological investigations into fish health that relate to assessing the impacts of both environmental and pathogenic factors.

Manuscript Submission and Review

Manuscript Categories

Manuscripts may be submitted in any of the following categories: (1) *Articles* are reports of substantial, controlled research that will be judged on their scientific merit. Critical reviews of timely topics will also be considered in this category. Articles should ordinarily not exceed 5,000 words, excluding references and tables (about 20 double-spaced manuscript pages), but longer ones will be considered. (2) *Communications* are shorter papers based on more restricted study objectives, sometimes without extensive statistical data, but with sound biological observations; promising work that may lead to additional in-depth studies; thorough testing of a technique; or case histories. Such papers will be evaluated as much for their practical utility as for their scientific quality. Communications should generally not exceed 3,000 words (about 12 double-spaced manuscript pages). (3) *Comments* are critiques of papers published by this journal, responses to which will be invited from the original authors; brief presentations of experiences or additional data related to previously published papers; or short discussions of technical issues pertinent to the aquatic animal health community.

Submission Procedures

Manuscripts and associated correspondence should be submitted at the journal's online submission and tracking site, http://mc.manuscriptcentral.com/jaah (this site may also be accessed through the Publications section at the American Fisheries Society's Web site, www.fisheries.org). Detailed instructions, including acceptable file formats, are available at the site.

Review Process

Submitted papers will be critically reviewed by at least two experts in the relevant discipline(s) and evaluated by one of the journal's associate editors. A manuscript may be returned to its author without review if it is judged to be of poor quality or inappropriate for this journal.

Authors have the option of anonymity; if they wish to exercise it, they should prepare their manuscripts accordingly.

Review of manuscripts relies on volunteers and can be a fairly lengthy process. However, we strive to get decisions to authors in 9–12 weeks. If revisions are requested, authors should make them promptly, normally within 90 days of receiving the editor's decision (short extensions will be allowed if there are justifiable delays). If a revision is not received within the allowed time, the paper will be considered withdrawn; late revisions will be treated as new submissions and may have to go through the review process again.

Publication Charges

Publication charges are US$75 per printed page and will be billed when the paper is in proof. Full and partial subsidies are available to voting members of the American Fisheries Society who certify that grant or agency funds are not available. Manuscript reviews are not affected by requests for subsidies; however, at least one author must be (or become) an AFS member by the time that a paper is published. Every paper published in the journal is subject to a $30 fee to offset handling costs. Authors will receive a free PDF of the published article and may purchase reprints of their paper when they receive their proofs.

Manuscript Preparation

Components

A typical manuscript will have the following components:

Title page.—The title page should give the title of the paper and the name(s) and complete mailing address(es) of the author(s). In addition to accurately reflecting the content of the paper, the title should be short (preferably no more than 12 words) and to the point. See a recent issue of the journal for the format to use for authors' names and addresses. A suggested running head (shortened version of the title) may also be included on the title page. Keywords are not used in this journal, however, and so should not be included.

Abstract.—Articles and communications require abstracts; comments do not. The abstract should consist of one paragraph (up to 300 words for an article and up to 200 words for a

communication) that concisely states why and (generally) how the study was done as well as what the results were and what they mean. It should not simply outline the contents (e.g., avoid statements to the effect that such-and-such is presented) or present the methods in detail. Citations and footnotes are not allowed in abstracts, and abbreviations should be used sparingly. Because abstracts tend to be more widely read than complete papers, authors should take care to make them comprehensive, clear, and interesting.

Introduction.—The introduction should provide a context for the work to be reported. In doing so, it should present at least a general overview of previous literature on the subject, guiding the reader to the paper's purpose and importance.

Methods.—Descriptions of the methods employed in the study should be detailed enough to enable readers to repeat it. Previously published descriptions may be cited in lieu of presenting complete new ones provided that the sources are readily available (in general, avoid citations to theses, dissertations, agency reports, and similar sources in this instance). If more than one method was used or a particular method entails a series of major steps, present each method or step in a separate subsection. Appropriate tables and figures can reduce the need for detailed verbal descriptions of methods. Papers focusing entirely on techniques do not require a separate section on methods.

Results.—As a rule, it is preferable to present detailed results in tables and/or figures and to devote the text to summary statements and analyses. Display data in tables if numerical precision is important, in figures if trends are paramount. Although the presentation of a large amount of raw data is generally not meaningful, data should not be refined to the point that the reader cannot verify the analyses or use the information for other purposes. In presenting the results of statistical tests, report the type of test, the test statistic, the degrees of freedom, and the significance level (P-value). Although the value 0.05 is commonly used as the threshold in hypothesis testing, we have no specific requirements in this area; in the interest of providing useful information, authors should report all P-values. It is very important that statistical designs and models be appropriate for the studies in which they are used; we encourage authors to have a statistician review their work before submitting a paper for publication. Lastly, statistical results should be presented in biologically meaningful terms rather than in purely statistical jargon.

Authors who describe hybridomas or cell lines should state that they are willing to share their material with other interested investigators.

Discussion.—A good discussion provides broad syntheses and stresses the relevance of the paper. In it authors should indicate the significance of their research, how it relates to current knowledge, and any avenues that it suggests for further research. Informed speculation is acceptable as long as it is clearly identified as such. Authors should avoid merely restating their results and/or (re)summarizing the literature.

Acknowledgments.—In this section authors may acknowledge the sources of their funding and thank those who contributed directly to the project or the preparation of the manuscript. Dedications and acknowledgment of emotional support from family and friends are not appropriate. If all authors are employees of the U.S. Government, this section should state that the mention of specific products does not constitute endorsement by their agency.

References.—References should be selected with a view to relevance and availability, with preference given to peer-reviewed publications that are widely available. Internal reports, papers presented at conferences, articles in preparation, and so forth should be treated as unpublished and cited like personal communications (i.e., parenthetically in the text alone). Authors should obtain written permission to cite such material. Common reference formats are given below; a more complete list is given in chapter 8 of the AFS style guide, which is available at the AFS Web site as well as the manuscript submission site.

Footnotes.—Text footnotes should be kept to a minimum. Typically, they are used to report changes of address for authors, identify additional sources of data, or explain technical nomenclature (e.g., the structures of fatty acids).

Tables.—In general, tables should be designed to present related information as simply and directly as possible. A good rule of thumb is to establish the point(s) that the table is intended to make, then to select the information required to do that and determine the most logical order in which to present it. Detailed guidelines for the preparation of tables may be found in chapter 12 of the AFS style guide, but a few of the more important ones may be mentioned here:

1. We prefer to print tables in "portrait" orientation but will allow ones in "landscape" orientation as long as they take up no more than one page.
2. Tables that are too long or too wide to fit on one page can be carried over to a facing page, but authors should try to avoid creating tables that span more than two pages. In general, very large tables should appear as supplementary tables in the online version of the article only.
3. Tables should contain only three horizontal rules (lines)—one before the column headings, one after those headings, and one at the bottom of the table—and no vertical rules.
4. As a rule, captions should be detailed enough that the table can be understood apart from the text (if there is more than one table with the same general structure, only the first needs to have a detailed caption). Captions should be written so as to stress the purpose of the table and not merely list its contents in a mechanical way.
5. There should be only one set of column headings. If the information to be presented seems to require more than that, the table should be redesigned (e.g., by switching the rows and columns) or split into two or more tables.

6. Bold, centered headings may be used within the body of the table to distinguish different types of data as long as they do not conflict with the column headings.
7. Only the first letter of a row or column heading should be capitalized (along with words or symbols that would be capitalized in ordinary text).
8. The data within the body of the table should not be crowded; if need be, blank rows can be inserted to separate data into logical groups or provide guides for the eye.
9. Significant differences among multiple means should be indicated by lowercase letters, beginning with the letter "z" ("z" may mark either the highest or the lowest value[s], but subsequent letters have to follow suit); there should be no omissions in the sequence of the letters. The letters should be set on the same lines as the values to which they pertain (not as superscripts) and be separated from those values by single spaces.
10. Values less than 1.00 should be preceded by zeroes (e.g., 0.78).
11. Values need not be reported to all significant digits if a lesser number of digits conveys the information in a meaningful way.
12. Footnotes should be indicated by superscripted lowercase letters, beginning with the letter "a"; the letters may appear in the row and column headings as well as the body of the table but not in the caption. The footnotes per se should be listed on separate lines at the bottom of the table.

Figure captions.—Figure captions should appear together in a list rather than separately with each figure (however, the number of the figure and the name of the corresponding author should be given outside the image area of each figure for purposes of identification). Like table captions, figure captions should generally be detailed enough that the figure can be understood apart from the text. To the extent possible, however, panel descriptions, (full) variable names, units of measure, legends, and so forth should be included in the figure itself rather than in the caption; in no case should they be given in both places. Different panels may be designated "A," "B," and so forth, but it is preferable to give them substantive labels (e.g., "Treatment" and "Control").

Figures.—Figures include visual materials such as graphs, maps, diagrams, and photographs. Figures have proved to be one of the most troublesome aspects of the publishing process. As the Journals Department has only limited ability to modify figures, they frequently have to be sent back to the authors for correction.

At the most fundamental level, figure design should follow certain commonsense principles: figures should be as simple and straightforward as possible; have a high enough resolution to be easily readable (300 dpi or more); and be consistent in the use of lettering, line widths, and other graphic elements. In addition, they need to conform to AFS style. It is particularly important to remember that most figures will be reduced by up to 50% when printed and thus need to be designed with this in mind. We recommend that authors use a copier to reduce each figure to the width of one or two printed columns (3.50 and 7.25 inches, respectively), depending on the dimensions of the particular figure, and verify that all elements are still legible. The following are particularly problematical: bold type (which tends to blur), italic type (which tends to become less visible), dashed lines (which tend to appear continuous), dotted lines (which tend to disappear entirely), and shading in which the different shades are not distinct enough. Additional guidelines for the preparation of figures may be found in the AFS style guide.

There is no additional charge for the reproduction of color figures in the online version of the paper. However, all figures in the print version will be in black and white unless specific arrangements have been made with the Journals Department to cover the additional costs of color printing. Because color printing is expensive, authors are advised not to use color to distinguish phenomena when other means (different shading, symbols, and so forth) are adequate.

Digital files in EPS, TIFF, and PSD formats are preferred; figures should be submitted as separate files rather than being imbedded in text files.

Mathematical and statistical expressions.—Chapter 4 of the AFS style guide covers the treatment of these expressions in detail, but a few general points may be mentioned here:

1. Symbols representing variables and parameters should be italicized only if they consist of single letters in the Latin alphabet (e.g., K and F_1, but CPUE and σ^2).
2. Logarithms should be expressed as $\log_e$ (*not* ln) or $\log_{10}$, depending on their base.
3. Long equations should be "broken" at logical points, normally after an operator such as a plus or minus sign.
4. Definitions of variables and parameters may be run into the text if only a few such terms are involved. If there are a number of them or they are used in more than one equation, a list is preferable (see section 4.8 of the style guide).
5. Avoid the expressions "the mean length was 45.2 $\pm$ 3.84 mm" and "the mean ($\pm$SD) length was 45.2 $\pm$ 3.84 mm" because they are at best awkward and at worst inaccurate. Use the expressions "the mean $\pm$ SD length was 45.2 $\pm$ 3.84 mm" or "the mean length was 45.2 mm (SD, 3.84)" instead.

Style and Format

Published articles represent the culmination of research efforts, often lengthy and highly sophisticated ones. To do those efforts justice, however, the articles must be well written; poorly written articles not only place an unnecessary burden on readers, they also cast doubt on the quality of the research itself. Although some people naturally write better than others, most can develop the ability to write well through practice and attention to detail. The introduction to the AFS style guide should be

a particularly valuable resource in this regard; in a few pages, it identifies the errors in composition mostly commonly encountered in the papers submitted to AFS journals and shows how to correct them. We also encourage authors to have other fisheries professionals critique their initial drafts with respect to presentation as well as substance. Authors whose native language is not English should make a point of having English speakers review their manuscripts before submission.

In writing for AFS journals, authors are also expected to follow certain style conventions pertaining to capitalization, spelling, punctuation, mathematical expressions, technical terms, and so forth. For instance, we require that the letter *P* (indicating the degree of statistical significance) be capitalized as well as italicized, whereas some journals require that it be lowercased. Although some of the more important style conventions are noted below, all of them are discussed in detail in the AFS style guide. Authors would be well advised to become familiar with the main elements of AFS style and to consult the guide frequently in preparing their manuscripts.

Resources for authors.—As suggested above, the principal resource on matters of style is the AFS style guide. Authors may also find it helpful to consult the *Chicago Manual of Style* (University of Chicago Press, Chicago) and *Scientific Style and Format* (Council of Science Editors, Chicago), though the AFS style guide always takes precedence.

The standard resource for word usage and spelling is *Webster's Third New International Dictionary*, as updated by the latest edition of *Merriam-Webster's Collegiate Dictionary*. Appendix A of the AFS style guide shows the proper way to spell many of the terms used in fisheries writing (some of which are not in the dictionary), including terms for which our preferred spelling differs from that in the dictionary.

The standard resource for the common and scientific names of North American fish species is the current edition of *Common and Scientific Names of Fishes from the United States*, *Canada*, *and Mexico* (American Fisheries Society, Bethesda, Maryland). For other aquatic species, authors should follow the companion publications *World Fishes Important to North Americans* and *Common and Scientific Names of Aquatic Invertebrates from the United States and Canada* (the volumes *Mollusks*, *Decapod Crustaceans*, and *Cnidaria and Ctenophora* are currently available in the latter series).

In most cases, scientific names should be included only at first mention in the abstract and text; full common names (e.g., "coho salmon" rather than simply "coho") should be used elsewhere. The format for the first mention is

coho salmon *Oncorhynchus kisutch*,

in which the scientific name follows the common name but is not given in parentheses. See chapter 9 of the AFS style guide for additional information on the treatment of species' names; the accepted plurals of fish names are given in Appendix C of the guide.

Names of parasitic diseases should follow "Standardized Nomenclature of Animal Parasitic Diseases (SNOAPAD)" by Kassai et al. (*Veterinary Parasitology* 29:299–326, 1988). Our standard sources for chemical and enzyme names are the current editions of the *Merck Index* (Merck & Co., Rahway, New Jersey) and *Enzyme Nomenclature* (Academic Press, San Diego, California), respectively. The preferred treatment of allozymes is noted in the article "Gene Nomenclature for Protein-Coding Loci in Fish" by J. B. Shaklee et al. (*Transactions of the American Fisheries Society* 119:2–15, 1990). Additional information on the treatment of these and other technical matters may be found in chapter 11 of the AFS style guide.

Manuscript format.—As an aid to reviewers and editors, authors should

1. use a line spacing of at least space and a half for all components of the paper, including the title page, footnotes, and tables;
2. number all pages sequentially and provide continuous line numbering beginning with the title page;
3. use a 12-point font throughout;
4. use no more than three levels of headings, as follows: (1) flush left, initial letters capitalized (except for prepositions and conjunctions), ordinary rather than bold type; (2) flush left, initial letters capitalized, italics; and (3) run in, only the initial letter of the first word capitalized, italics, a period and a long dash; and
5. turn off automatic hyphenation and justification.

General style conventions.—A detailed presentation of AFS style is beyond the scope of these guidelines. The following conventions, however, are so general as to apply to virtually every paper:

1. Only symbols and abbreviations included in Webster's dictionaries or listed at the end of these guidelines (as well as at the back of each printed issue of the journal) may be used without definition. All others should be defined at first use (e.g., coefficient of variation [CV = 100·SD/mean]). Abbreviations should not be introduced unless they are used at least two more times.
2. As a rule, only metric units may be used. The only exceptions are a few quantities that are typically expressed only one way (e.g., g [of medication]/lb [of feed]).
3. Single-digit numbers should be spelled out unless they are used with units of measure or in conjunction with larger values (e.g., 8 walleyes and 16 saugers). Numbers with four or more digits should contain commas; those less than 1.00 should be preceded by zeroes.
4. Ratios involving two values or units of measure should be indicated by forward slashes (e.g., 0.30 g/d); ratios involving three such terms should be indicated by negative exponents (e.g., $0.01\ g \cdot g^{-1} \cdot d^{-1}$).
5. Ages of fish should be expressed by Arabic numerals and not contain plus signs (e.g., a fish is age 1 [not age 1+] from

the January 1 after it hatches to the following December 31). Use "age 0" or "young of the year" instead of YOY.
6. Dates may be expressed as either day–month–year (e.g., 11 January 2011) or month–day–year (e.g., January 11, 2011), provided that the same format is used throughout the paper. Note that the term "Julian day" does not mean day of the year and should not be used in that context.
7. Time should be expressed in terms of the 24-hour clock followed by the word "hours" (e.g., 1435 hours rather than 2:35 p.m.).

Reference formats.—Text citations should conform to the author–year system. Examples of common types are as follows:

(Johnson 1995)
(Johnson and Smith 1996)
(Johnson et al. 1997, 1998) [three or more authors]
(Johnson et al. 1999, 2001; Smith 2000)
(Johnson 2000a, 2000b)
(Johnson, in press)
(E. M. Johnson, National Marine Fisheries Service, personal communication)

Note that with one exception citations should be listed in chronological order; the exception is that all citations to the same author(s) should be grouped together (see the fourth example above).

In reference lists, references should be in strict alphabetical order by authors' last names; if there are two or more references with the same authors, those references should then be listed chronologically. All authors must be named in references.

Detailed information on reference formats may be found in chapter 8 of the AFS style guide. The more common types are as follows:

Articles in journals

Pace, M. L., and J. D. Orcutt. 1981. The relative importance of protozoans, rotifers, and crustaceans in a freshwater zooplankton community. Limnology and Oceanography 26:822–830.

Note that (1) except for the first author, authors' initials come before their last names; (2) only the first word of the title of the article is capitalized (along with any other words that would be capitalized in ordinary text); and (3) the name of the journal is given in full.

Books

Krebs, C. J. 1989. Ecological methodology. Harper and Row, New York.

Chapters in books

Omernik, J. M. 1995. Ecoregions: a spatial framework for environmental management. Pages 49–62 *in* W. S. Davis and T. P. Simon, editors. Biological assessment and criteria: tools for water resource planning and decision making. Lewis Publishers, Boca Raton, Florida.

Government reports

Reports that are issued on a regular basis are treated much like articles in journals (the principal difference being that page numbers should not be given); other reports are treated like books:

Everest, F. H., C. E. McLemore, and J. F. Ward. 1980. An improved tri-tube cryogenic gravel sampler. U.S. Forest Service Research Note PNW-350. [journal format]

USEPA (U.S. Environmental Protection Agency). 1998. Water quality criteria and standards plan: priorities for the future. USEPA, 822-R-98-003, Washington, D.C. [book format]

Electronic publications

Formats for references to electronic publications are still evolving. The important thing is to give the reader enough information to be able to locate the reference easily.

If a book or report is only available online or is available in print form but was accessed online, the reference should be formatted as follows:

Baldwin, N. A., R. W. Saalfield, M. R. Dochoda, H. J. Buettner, and R. L. Eshenroder. 2000. Commercial fish production in the Great Lakes, 1867–1996. Great Lakes Fishery Commission, Ann Arbor, Michigan. Available: www.glfc.org/databases/. (September 2000).

The month and year in parentheses indicate when the site was last accessed.

If a journal is available in print form, authors should use the standard reference format even if they accessed the article online. If a journal is only available electronically, the format depends on the way(s) in which articles are designated. Two possible formats are as follows:

Gallagher, M. B., and S. S. Heppell. 2010. Essential habitat information for age-0 rockfish along the central Oregon coast. Marine and Coastal Fisheries: Dynamics, Management, and Ecosystem Science [online serial] 2:60–72. DOI: 10.1577/C09-032.1

Kimmerer, W. J. 2004. Open-water processes of the San Francisco Estuary: from physical forcing to biological responses. San Francisco Estuary and Watershed Science [online serial] 2(1):article 1.