
Instructions to Authors

Canadian Journal of Fisheries and Aquatic Sciences

The Journal welcomes manuscripts reporting significant new knowledge and understanding of fisheries and aquatic sciences. Manuscripts may concern cells, organisms, populations, communities, ecosystems, or processes that affect aquatic systems. They may cover a range of disciplines including biology and ecology of marine and freshwater organisms, limnology, oceanography, physiology, toxicology, genetics, economics, disease, and management. Manuscripts are selected for publication according to the extent and significance of new knowledge or ideas presented. Preference will be given to manuscripts that emphasize understanding of observed phenomena and interpretation of experimental results.

We encourage papers that lead from clearly stated purpose or rationale, and from testable hypotheses, concepts, or questions, to identifiable conclusions or syntheses. Such papers may amplify, modify, question, or redirect accumulated knowledge embodied in contemporary perceptions of a particular state of aquatic sciences. Rationale for the study and interpretation of the results should be set in a broad disciplinary or interdisciplinary context. Methodological and modeling papers should include applications and provide verification of enhanced performance.

We continue to discourage papers that are essentially descriptive, except in emerging disciplines; have only site-specific or local applications (a certain year, place, taxon, chemical compound etc.); only confirm previously established principles; or apply standard techniques without breaking new methodological ground. Studies that are clearly preliminary or fragmentary, or whose relevance to broader issues is not demonstrated, and interpretations solely of an unsupported speculative nature, will not be entertained.

Manuscripts submitted should be as comprehensive as possible; if a single paper cannot be produced, then closely related papers should be cross-referenced and submitted together.

The Journal considers the following types of contributions:

Articles—Studies of broad scope that are original contributions to science.

Perspectives—Syntheses, critiques, and re-evaluations of current concepts and paradigms.

Discussions—Comment and Reply on subjects recently published in the Journal.

Rapid Communications—New concepts, methodology, and topical or controversial subjects.

Guidelines for these contribution types are available from the Editorial Office's web site <<http://www.uoguelph.ca/~cfas/>>.

The publication process

Submit manuscripts in triplicate to the Editors, *Canadian Journal of Fisheries and Aquatic Sciences*, University of Guelph, Department of Zoology, Building #006, Room 107, Guelph, ON N1G 2W1, Canada, accompanied by a covering letter that (1) states the main points and significance of the work, (2) avows

that all coauthors fully participated in and accept responsibility for the work, (3) avows that the manuscript is not being considered for publication elsewhere, (4) suggests potential referees, (5) identifies other manuscripts, including "extended abstracts," containing the same, similar, or related information, and (6) includes the telephone and fax numbers, as well as e-mail and current mailing addresses of all authors. Original typescripts and figures (except halftones) are best retained by the author until requested. Enclose the manuscript text, tables, and figures on diskette, specifying the software package(s) and version(s) used; Microsoft Word is the preferred word processing package for **review purposes**. **Packaging of manuscripts and illustrations should be robust enough to resist damage in transit.**

Each manuscript is normally submitted to two referees for appraisal, before final evaluation by the Editors and (or) Associate Editors. However, the Editors will return unreviewed those manuscripts that do not fall within the Journal's scope or character, and those that exceed the Journal's guidelines for prior publication as "extended abstracts" (guidelines available from the Editorial Office's web site). Papers submitted for inclusion in Journal Supplements are treated with the same rigor of review as articles in regular issues.

As general guidelines: manuscripts should not exceed 36 double-spaced pages, inclusive of references, tables, and figures; the number of references should not normally exceed 36; the number of tables plus figures should not normally exceed 12. Shorter, efficiently written papers are encouraged. Longer Articles (e.g., with more tables and figures) and longer Perspectives (e.g., with more references) will certainly be accepted, provided that their significance and interpretation of the new knowledge are commensurate with their length.

Responses to referees and revisions to manuscripts should normally be completed within 90 days. Manuscripts not returned within 90 days of receipt may be treated as new submissions unless the authors contact the Editorial Office.

Copyright material—Whenever a manuscript contains material that is protected by copyright (aerial photographs, figures, tables, etc.), it is the obligation of the author to secure **written permission from the holder of the copyright** to reproduce the material for **both the print and electronic formats**. These letters must accompany the submitted manuscript; otherwise, publication may be delayed. All material designated as "taken from..." must be accompanied by a letter of permission. If the material is not to be reproduced exactly as in the original, it should be designated as "modified from..." In either case the source of the material must be included in the reference list.

Submission of final accepted manuscript—Authors are requested to submit the **final accepted manuscript only, both in hard copy format and on disk**. Text files and figure files should be submitted on separate disks. All disks must be labeled clearly with the authors' names. **Text** (including tables) should be provided in a word-processing format (any form of

WordPerfect, Microsoft Word, or TeX is preferable, IBM compatible or Macintosh). TeX macros for preparing papers for submissions are available at <ftp://ftp.tex.ac.uk/tex-archive/macros/latex/contrib/supported/nrc/>, <ftp://ftp.dante.de/tex-archive/macros/latex/contrib/supported/nrc/>, and <ftp://ctan.tug.org/tex-archive/macros/latex/contrib/supported/nrc/>. Identify the word-processing software, version number, and type of computer used (IBM or Macintosh). For **figures**, see the section "Preparation of Electronic Illustration Files." Include a statement in the letter accompanying the manuscript that the version on the disk exactly matches the final hard copy version.

Galley proofs—A galley proof, illustration proofs, the copy-edited manuscript, and a reprint order form are sent to the corresponding author. **Galley proofs must be checked very carefully, as they will not be proofread by NRC Research Press**, and must be returned within 48 h of receipt. The proof stage is not the time to make extensive corrections, additions, or deletions. The cost of changes introduced at the proof stage by the author, if deemed to be excessive, will be charged to the author.

Reprints—If reprints are desired, the reprint order form must be filled out completely and returned with payment (cheque, credit card number, purchase order number, or journal voucher) together with the corrected proofs and manuscript. Orders submitted after the Journal has been printed are subject to considerably higher prices. **The Journal does not provide free reprints and reprints are not mailed until a purchase order number or payment is received.**

Copyright transfer—All authors are required to complete a copyright transfer form assigning all rights to NRC. Copyright transfer forms are available from the Editors, in any current issue of the Journal, or on the web site of NRC Research Press <http://www.nrc.ca/cisti/journals/>.

Requests for permission to republish the paper, in whole or in part, should be sent to NRC Research Press.

Preparation of manuscripts

General guidelines

Movement of manuscripts through review channels and the Editorial Office is greatly expedited if manuscripts are prepared in Journal style and format. General guidelines follow.

Type the manuscript on white paper (21.6 × 27.9 cm (8.5 × 11 in.)) on only one side of the page. Leave all margins at least 2.5 cm (1 in.) wide. Type only the title, authors' names and affiliations, and related footnotes on the first page. Number all pages beginning with the title page, including those for tables and captions for illustrations. **Double-space all parts of the manuscript**, including tables, captions for tables and figures, footnotes, and the reference list. Use italic font if available; when not available, underline material that is to be set in italics. Do not use all capitals anywhere in the manuscript. Use the name-and-year system for literature citations.

Editorial practices

Spelling should follow that of *Webster's Third New International Dictionary* or the *Oxford English Dictionary*. Authors are responsible for consistency in spelling.

The *CBE Manual for Authors, Editors, and Publishers: Scientific Style and Format* (6th ed., 1994) published by the Council of Biology Editors, Inc., Chicago, IL 60603, U.S.A., is used as the authority in matters of form. Titles of periodicals are abbreviated as in *BIOSIS Serial Sources* (BIOSIS, 2100 Arch Street, Philadelphia, PA 19103-1399, U.S.A.). Authors are responsible

for ensuring the accuracy and completeness of their reference list. The Journal follows the names and spelling for fishes recommended in *A List of Common and Scientific Names of Fishes from the United States and Canada* (5th ed., 1991, Spec. Publ. No. 20, American Fisheries Society) and the gene nomenclature for protein-coding loci outlined in Shaklee et al. (1990, *Trans. Am. Fish. Soc.* **119**: 2–15). **SI** units (Système international d'unités) should be used or SI equivalents should be given. This system is explained and other useful information is given in the *Canadian Metric Practice Guide* (1989) published by the Canadian Standards Association (178 Rexdale Blvd., Etobicoke, ON M6N 3T3, Canada). For practical reasons, some exceptions to SI units are allowed (noted in the editorial in the Journal, Vol. 40, No. 12).

Checklist for manuscripts

Attention to the following questions will expedite appraisal of manuscripts by referees and editors.

Are the findings, interpretations, and conclusions adequately documented and relevant to the purpose of the study?

Are all the tables and figures needed and organized to facilitate comparison? Are there inconsistencies between tables and figures and the text, or within the text? Should some of the data be made available separately in a data or manuscript report or at a data depository?

If statistical analysis is included, is it subordinate to the research? When probability statements are made, are only the statistical tests cited and unnecessary statistical tables excluded?

Would any of the text be clearer if condensed? Are summary statements given at the beginning of sections and paragraphs, and are details in sections and paragraphs relevant to their topics? Does the organization of the manuscript follow logically from the statement of purpose in the introduction?

Does the **title** encompass the content of the report? Does the **Abstract** give the essentials of the new knowledge? Is the **Introduction** largely limited to the scope, purpose, and rationale of the study? Is review of the literature limited to defining the problem? Are details of **Materials and methods** limited to what readers need to understand the design of the study and to judge the adequacy of the data? Are generalizations from the **Results** supported by the data provided? Are findings distinguished from inferences? Is the **Discussion** limited to interpretation and significance of the findings?

The most common technical problems in submitted manuscripts are listed below. Authors can hasten the processing of their papers if they pay attention to these points during manuscript preparation.

- (1) Limit abstract to one paragraph of about 175 words.
- (2) Double-space all elements of the manuscript, including references, table captions, and figure legends.
- (3) Avoid exclusive use of capitals anywhere in the manuscript, including headings, table captions, and figure legends.
- (4) Italicize only Latin names of organisms and appropriate statistical and mathematical notations.
- (5) Use correct SI symbols for units or measure in figures, tables, and text. Place a zero before the decimal for numbers less than unity.
- (6) Avoid ambiguous forms such as g C/m²/day; use g C·m⁻²·day⁻¹.
- (7) Identify the test used to test statistical significance and give the probability value. No reference is needed for common statistical tests.
- (8) In the text, generalize from tables and figures; avoid re-

peating all the details. Be sure each table and figure can stand on its own and is referred to in the text in numerical order. The captions should explain the purpose of the table or figure.

- (9) Include an acknowledgement section at manuscript stage, not when page proofs arrive.
- (10) Provide the person's initials and mailing address when referring to personal communications.
- (11) Delete unnecessary references that do not apply directly to the problem.
- (12) Check references carefully against text citations and vice versa to ensure exact correspondence. Provide an availability statement for less easily retrieved material, e.g., available from Department of Economics, Simon Fraser University, Burnaby, BC V5A 1S6, Canada.
- (13) Delete commas between name and date in citations such as (Smith 1990) and do not underline or italicize "et al."
- (14) Replace 10ⁿ in table headings and figure axes with appropriate SI prefixes or use words (e.g., thousands).
- (15) Photocopies of figures, except halftones, are appropriate for review purposes. Send photographic prints, laser printouts, or original artwork/electronic files of figures (see "Illustrations" and "Preparation of electronic illustration files") on request for publication. Use the same type of lettering throughout if possible.

Parts of the manuscript

Organization

Organize the manuscript on the basis of the purpose or scope of the study as stated in the introduction. Ensure that the title and headings are in harmony with the statement of purpose.

Before writing any of the manuscript, list tentative headings in as few ranks as possible. Rework them until they appear to allow logical development for the reader; usually, chronological order is not effective. The findings will be more readily appreciated if methods, findings, and discussion are given in separate sections.

Organize tables and figures to facilitate comparisons, grouping related data in as few tables and figures as feasible. As far as possible, make the tables and figures clear without reference to the text.

Begin sections and paragraphs with topic sentences containing generalizations that lead readily to the particulars. Giving a conclusion first and then supporting it not only improves readability but also facilitates assessment by other scientists. Failure to give the most newsworthy generalizations first is one of the most prominent shortcomings in presentation of manuscripts.

See that everything in each section is relevant to the heading, and everything in each paragraph to the topic (opening) sentence.

Before writing any paragraphs, try writing the topic sentences for all of them and arranging these in appropriate order.

Title

Limit the title to what is documented in the manuscript. It is the key to the article and should clearly and concisely reveal what appears in the paper itself. The title serves two functions: (1) it allows the reader to judge whether or not the article is of potential interest and (2) it should provide enough information to permit the reader to judge the scope and potential importance of the article. Words in the title should convey a maximal amount of information and identify the nature of the research, organism used, and where appropriate, the technical approach (e.g., X

ray, chromatography, mathematical analysis). Titles should not begin with a numeral or introductory prepositions such as "On" or "Towards" or expressions such as "A contribution to..." or "Investigations on..." Good titles greatly assist scientists and librarians in using scientific literature and aid indexers in preparing titles for keyword indexes. Series titles should be avoided.

Abstract

An abstract is required for all manuscripts and should state concisely, in up to 175 words, what was done, found, and concluded. Like the title, the abstract enables readers to determine the paper's content and decide whether or not they need to read the entire article. Begin the abstract with the main conclusion from the study, and support it with the relevant findings. Limit details of methods to those needed in understanding what was done, and work them into statements of findings. Avoid using phrases such as "...is discussed" or "...was found"; be specific. As the abstract is often divorced from the main body of the paper by abstracting and indexing services and is the only part of a paper some readers ever see, it is important that it accurately reflect the paper's contents and be completely self-contained (i.e., any *essential* references) in a retrievable form (e.g., R.B. Deriso. 1980. Can. J. Fish. Aquat. Sci. **37**: 268–282).

Introduction

Limit the introduction largely to the scope, purpose, and rationale of the study. Restrict the literature review and other background information to that needed in defining the problem or setting the work in perspective. Try beginning with the purpose or scope of the work, defining the problem next, and adding guideposts to orient the reader. An introduction generally need not exceed 375–500 words.

Materials and methods

Materials and methods provides the framework for getting answers to the questions posed in the purpose of the work.

Limit the information on materials and methods to what is needed in judging whether the findings are valid. To facilitate assessment, give all the information in one section when possible. Refer to the literature concerning descriptions of equipment or techniques already published, detailing only adaptations. Often, it helps to begin statements on procedures with a phrase indicating the purpose, such as "To determine...we..." If the section is long, consider using subheadings corresponding to headings for the findings.

Results

Limit the results to answers to the questions posed in the purpose of the work, and condense them as comprehensively as possible. Give the findings as nearly as possible in the terms in which the observations or measurements were made and so avoid confusion between facts and inferences. State noteworthy findings to be noted in each table and figure, and avoid restating in the text what is clear from the captions. Material supplementary to the text can be archived in the report literature or a recognized data depository and referenced in the text.

Discussion

Limit the discussion to giving the main contributions of the study and interpreting particular findings, comparing them with those of other workers. Emphasis should be maintained on synthesis and interpretation and exposition of broadly applicable

generalizations and principles. If these are exceptions or unsettled points, note them and show how the findings agree or contrast with previously published work. Limit speculation to what can be supported with reasonable evidence. End the discussion with a short summary of the significance of the work and conclusions drawn. If the discussion is brief and straightforward, it can be combined with the results section.

Acknowledgements

We strongly urge authors to limit acknowledgments to those who contributed substantially to scientific and technical aspects of the paper, gave financial support, or improved the quality of the presentation. Avoid acknowledging those whose contribution was clerical only.

References

References should be selected judiciously and be largely restricted to significant, published literature. References to unpublished data, manuscripts in preparation or submitted to other journals, progress reports, and unpublished papers given at annual meetings may not be cited in the reference list but may be noted in the text as unpublished data or personal communications (include mailing addresses). If consultants' reports or other documents of limited circulation must be cited, they should carry with them an availability statement explaining where the document can be obtained. **Citations of literature in the text should be carefully checked against those in the reference list and vice versa to ensure exact correspondence.** Nearly every manuscript submitted to the Journal contains errors in the references.

Footnotes

Footnotes to material in the text should not be used unless they are unavoidable, but their use is encouraged in tables. Where used in the text, footnotes should be cited in the manuscript by superscript Arabic numbers (except in the tables, see below) and should be numbered serially beginning with any that appear on the title page. Each footnote should be typed on the manuscript page on which the reference to it is made; **footnotes should not be included in the list of references.**

Equations

Equations should be clearly typed; triple-spacing should be used if superscripts and (or) subscripts are involved. Superscripts and subscripts should be legible and carefully placed. Distinguish between lowercase *l* and the numeral *one*, and between capital *O* and the numeral *zero*. A letter or symbol should represent only one entity and be used consistently throughout the paper. Each variable must be defined in the text, or in a **List of symbols** to appear after the reference list. Variables representing vectors, matrices, vector matrices, and tensors must be clearly identified. Numbers identifying equations must be in parentheses and placed flush with the **left margin**. In numbering, no distinction is made between mathematical and chemical equations.

Tables

Tables are used to present repetitive data and should be as economical of space as possible. Design tables to fit a 1-, 1½-, or 2-column width of the Journal. Type each on a separate page and number with Arabic numerals. Use horizontal lines above and below the headings and below the columns, and seldom elsewhere. Never use vertical lines; leave extra space instead. Table captions should be succinct and identify the purpose of the table sufficiently well to allow the table to stand on its own. Indicate table footnotes by superscript lowercase letters and type them below the table. Place the tables after the list of references. Note that *text tables* are not numbered, are typed within the text, and seldom need horizontal lines.

Appendices

Figures and tables used in an appendix should be numbered sequentially but separately from those used in the main body of the paper, for example, Fig. A1, Table A1, etc.

Supplemental material

The National Research Council of Canada maintains a depository in which supplementary material may be placed, either at the request of the author or suggestion of the Editors. Such material may include extensive tables of data, detailed calculations, and maps not essential for understanding and evaluating the paper. Such material must be clearly marked when the manuscript is submitted. Tables and figures should be numbered in sequence separate from those published with the paper (e.g., Fig. D1, Table D1). The supplemental material should be referred to by footnotes. Copies of material in the depository may be purchased from the Depository of Unpublished Data, CISTI, National Research Council of Canada, Ottawa, ON K1A 0S2, Canada.

Illustrations

Provide photographic reproductions, laser printouts, or the original artwork (no larger than 27.9 × 43.2 cm (11 × 17 in.)) of each illustration. Provide three sets of illustrations for review purposes.

Each figure or group of figures should be planned to fit, after appropriate reduction, into the area of either one or two columns of text. The maximum finished size of a one-column illustration is 8.8 × 23.9 cm (3.5 × 9.4 in.) and that of a two-column illustration is 18.2 × 23.9 cm (7.2 × 9.4 in.). The figures (including halftones) must be numbered consecutively in Arabic numerals, and each one must be referred to in the text and must be self-explanatory. All terms, abbreviations, and symbols must correspond with those in the text. Only essential labelling should be used, with detailed information given in the caption. Each illustration must be identified by the figure number and the authors' names on the back of the page or in the left-hand corner, well away from the illustration area.

Line drawings should be made with black ink or computer-generated in black on high-quality white paper or other comparable material. For computer-generated graphics, supply a laser print at the highest resolution available. **Photocopies are not acceptable.**

All lines must be sufficiently thick (0.5 points minimum) to reproduce well, and all symbols, superscripts, subscripts, and decimal points must be in good proportion to the rest of the drawing and large enough to allow for any necessary reduction without loss of detail. Avoid small open symbols; these tend to fill in upon reproduction. **Lettering produced by dot matrix printers or typewriters, or by hand, is not acceptable.** The same font style and lettering sizes should be used for all figures of similar size in any one paper.

Maps must have very clear, bold patterns and must show longitudes and latitudes (or UTM coordinates) and a scale. All place names and geographic features on Quebec maps must be in French only, with proper accents and capitalization.

Photographs should be *continuous tone* on glossy paper. Prints must be of high quality, on glossy paper, with strong contrast. The copies for reproduction should only show essential features, be trimmed, and mounted on **thin** flexible white bristol board with no space between those arranged in groups. A photograph, or group of them, should be planned to fit into the area of either one or two columns of text **with no further reduction**. Electron micrographs or photomicrographs should include a scale bar directly on the print. The best results will be obtained if the authors match the contrast and density of all figures arranged as a single plate.

Color illustrations will be at the author's expense. Further details on prices are available from Cecily Pearson, Managing Editor of the Journal (613-993-9099; fax: 613-952-7656; e-mail: cecily.pearson@nrc.ca).

NRC Research Press prefers the submission of electronic illustration files for accepted manuscripts and will use these electronic files whenever possible. If electronic files are not available, paper versions of the figures will be scanned. Note that the scanner will easily reproduce flaws (e.g., correction fluid, smudges). Submission of noncontinuous (screened) photographs and scanned illustrations printed out on laser printers is not recommended as moirés develop; a moiré is a noticeable, unwanted pattern generated by rescanning or rescreening an illustration that already contains a dot pattern.

Preparation of electronic illustration files

Authors must supply copies of the original electronic files (i.e., the files directly from the software application that they were created in) and **high-quality laser proofs** of the images. **Electronic files (i.e., figure number and figure content) should match the laser proofs.** On the disk label, identify (1) the software application and version; (2) file name(s), size, and extension; and (3) if the files have been imported from another software. If you have compressed your files, indicate what compression format was used. PC or Macintosh versions of True Type or Type 1 fonts should be used. **Do not use bitmap or nonstandard fonts.** Electronic graphics can be accepted on the following disks: 3½-in. disks, 100-MB Zip cartridge, and CD-ROM.

All figures should be submitted at their final published size. For figures with several parts (e.g., *a, b, c, d*, etc.) created using the same software application, assemble them into one file rather than sending several files.

Remember that the more complex your artwork becomes, the greater the possibility for problems at output time. Avoid complicated textures and shadings, especially in vector illustration programs; this increases the chance for a poor-quality final product.

Bitmap (raster) files—Bitmaps are image files produced using a grid format in which each square (or pixel) is set to one level of black, colour, or grey. A bitmap (rasterized) file is broken down into the number of pixels or picture elements per inch (ppi). Pixels per inch is sometimes referred to as dots per inch (dpi). The higher the resolution of an image, the larger the number of pixels contained within the rectangular grid.

The proper resolution should be used when submitting bitmap artwork. The minimum requirements for resolution are 600 dpi for line art and finelines (line art with fine lines or shading), 300 dpi for halftones and colour, and 600 dpi for combinations (halftones with lettering outside the photo area).

All *colour* files submitted must be as CMYK (cyan, magenta, yellow, and black). These colours are used in full-colour commercial printing. RGB graphics (red, green, and blue; colours specifically used to produce an image on a monitor) will not print correctly.

Vector files—Vector files are image files produced using elements such as lines and shapes. Typically these files are used for *line drawings*.

Bitmaps inside vector files—Bitmaps can be imported into vector/draw applications only for the purpose of adding and overlaying information, lines, text, etc. Bitmaps should not be resized, cropped, rotated, or otherwise manipulated after importing.

The preferred graphic application of NRC Research Press is CorelDraw! For other applications that can be used, see the "Electronic graphics list" at <http://www.nrc.ca/cgi-bin/cisti/journals/rp/rp2_prog_e?cjas_graphics_e.html>.

Format conventions

Abbreviations

Abbreviate terms denoting units of weight and measurement in the text only when they are preceded by numerals.

becquerel (Bq)
calorie (cal)
centimetre (cm)

centimetre, square (cm²)
centimetre, cubic (cm³)
centimetres per gram per second (cm·g⁻¹·s⁻¹)
coulomb (C)
decimetre (dm)
degree Celcius (°C)
degrees of freedom (df)
gram (g)
hectare (ha)
hertz (Hz)
hour (h)
joule (J)
kilometre (km)
litre (L)
lumen (lm)
lux (lx)
metre (m)
metre, square (m²)
metre, cubic (m³)
micrometre (µm)
milligram (mg)
millilitre (mL)
millimetre (mm)
millimetre, square (mm²)
minute (min)
molar mass (M)
mole (mol)
moles per litre (mol/L, M)
Pascal (Pa)
second (s)
standard deviation (SD)
standard error (SE)
tonne (metric ton) (t)
volt (V)
volume (vol)
watt (W)

Dates

Dates may be written in the sequence day–month–year without internal punctuation (On 9 October 1983 the...), or the alternative sequence month–day–year may be used with the year offset by commas (On October 9, 1983, the...).

Reference citations in text

Name-and-year system

The Journal uses the name-and-year system of citation; that is, the surname of the author(s) and the year of publication are inserted in the text at an appropriate point: "Brown (1983) compared..." or "...were compared (Brown 1983)." If the reference has more than two authors, include only the surname of the first author followed by "et al." (not italicized): "Brown et al. (1983) compared..." or "...were compared (Brown et al. 1983)."

Personal communications

Personal communications are not listed in the reference list. Using parentheses in the text, state the name and mailing address of the communicator followed by "personal communication."

Unpublished data

If an unpublished book or article has been accepted for publication, list it in the reference list section followed by the notation "In press." Only those manuscripts that are in galley or page proof stage or for which there is an acceptance letter can be considered in press. If an article is submitted but not yet accepted, state the name and address of the author of the unpublished material

followed by the notation "unpublished data" in the text and do not include it in the reference list.

Reference lists

References should be listed at the end of the paper in alphabetical order according to surnames of the first author. References with the same first author are listed in the following order. (1) Papers with **one author only** are listed first in chronological order, beginning with the earliest paper. (2) Papers with **dual authorship** follow and are listed in alphabetical order by the last name of the second author. (3) Papers with **three or more authors** appear after the dual-authored papers and are arranged chronologically.

The following bibliographic citations illustrate the punctuation, style, and abbreviations (according to *CASSI* or *BIOSIS Serial Sources*) for references.

Journal article

Peterman, R.M. 1982. Model of salmon age structure and its use in pre-season forecasting and studies of marine survival. *Can. J. Fish. Aquat. Sci.* **39**: 1444–1452.

Entire issue of journal

Gordon, D.C., Jr., and Hourston, A.S. (*Editors*). 1983. Proceedings of the Symposium on the Dynamics of Turbid Coastal Environments. *Can. J. Fish. Aquat. Sci.* **40**(Suppl. 1).

Book in a series

Scott, W.B., and Crossman, E.J. 1973. Freshwater fishes of Canada. *Bull. Fish. Res. Board Can.* No. 184.

Book not in a series

LeBlond, P.H., and Mysak, L.A. 1978. Waves in the ocean. Elsevier, New York.

Part of book

Healey, M.C. 1980. The ecology of juvenile salmon in Georgia Strait, British Columbia. *In* Salmonid ecosystems of the North Pacific. *Edited by* W.J. Neil and D.C. Himsworth. Oregon State University Press, Corvallis, Oreg. pp. 203–229.

Corporate author

American Public Health Association, American Water Works Association, and Water Pollution Control Federation. 1975. Standard methods for the examination of water and wastewater. 14th ed. Washington, D.C.

Theses

Kutty, M.N. 1999. Some studies on the respiratory quotient in goldfish and rainbow trout. Ph.D. thesis, University of Toronto, Toronto, Ont. *Natl. Libr. Can., Can. Theses Microfilm No.* 646.

Reports

Smith, J.E. 1981. Catch and effort statistics of the Canadian groundfish fishery on the Pacific coast in 1980. *Can. Tech. Rep. Fish. Aquat. Sci.* No. 1032.

Translation

Koike, A., and Ogura, B. 1977. Selectivity of meshes and entrances of shrimp traps and crab traps. *J. Tokyo Univ. Fish.* **64**: 1–11. (Translated from Japanese by *Can. Transl. Fish. Aquat. Sci.* 4950, 1983.)

Time

A colon should be used as the separator between hour and minute and between minute and second. The symbols "h," "min," and "s" are not used because they are symbols for hour, minute, and second in the sense of duration or the length of time. Thus, "12 h 30 min" expresses a measured time of twelve hours and thirty minutes duration whereas 12:30 refers to the time of day.

Word list

The spelling of the following words is frequently inconsistent in submitted manuscripts. We prefer that authors adhere to the Journal's house style for these commonly used terms:

age-class (n.)
aquaculture (n.)
Arctic char (n.)
brackish water (n.)
brackish-water (adj.)
cold water (n.)
cold-water (adj.)
deep sea (n.)
deep-sea (adj.)
deep water (n.)
deepwater (adj.)
freshwater (n., adj.)
fresh water (n.)
groundwater (n., adj.)
hard water (n.)
hardwater (adj.)
headwater (n., adj.)
lake water (n., adj.)
meltwater (n., adj.)
open water (n.)
open-water (adj.)
percent (n.)
salt water (n.)
saltwater (adj.)
sea-run (adj.)
seawater (n., adj.)
shallow water (n.)
shallow-water (adj.)
size-class (n.)
snowmelt (n.)
soft water (n.)
softwater (adj.)
tidewater (n., adj.)
t test (n., adj.)
warm water (n.)
warmwater (adj.)
year-class (n.)
young-of-the-year (n., adj.)

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