*North American Journal of Aquaculture*


# NORTH AMERICAN JOURNAL OF AQUACULTURE

## Guide for Authors

### Editorial Policy

We encourage submission of manuscripts covering all aspects of aquaculture including broodstock selection and spawning, nutrition and feeding, health and water quality, facilities and production technology, and management of ponds, pens, and raceways. We will consider papers dealing with ways to improve the husbandry of any aquatic species—marine or freshwater, vertebrate or invertebrate—raised for commercial, scientific, recreational, enhancement, or restoration purposes that may be of interest to North Americans.

Manuscripts may be submitted to any of the following categories. (1) *Articles* are reports of substantial, controlled research that will be judged on their scientific merits and relevance to practical aquaculture. Critical reviews of timely topics will also be considered in the article category. (2) *Communications* are shorter papers reporting nonreplicated experiments, exploratory culture of a new species or life stage, thorough testing of a new technique, etc. Such papers will be judged primarily for the biological insights they generate, for the practical contribution they make to aquaculture, and for the care with which the work was done. (3) *Technical Notes* are short papers dealing with operational improvements, unusual observations, and descriptions of new or improved techniques or equipment. These papers are judged for their practical application and general interest. (4) *Comments* are critiques of data and interpretations previously published in this journal (responses to which will be invited from the original authors), brief presentations of experiences or additional data relative to previously published papers, or short discussions of technical issues pertinent to the aquacultural community. We also will publish ''errata,'' corrections of papers previously published in this journal.

Authors should not republish their original data without full attribution and explicit permission; see ''Dual Publication of Scientific Information,'' in the *Transactions of the American Fisheries Society* 110:573–574, 1981.

Authors are responsible for the statistical validity of their experiments; both the experimental design and the analyses of results should receive critical review by a statistician *before* the paper is submitted to the journal.

### Manuscript Submission and Review

Submit new manuscripts and associated correspondence at the journal's online manuscript submission and peer review site: naja.allentrack.net. You may also access the manuscript submission site through the Publications pages on the American Fisheries Society's Web site (www.fisheries.org). On your first visit to the journal site, you will need to register for an account. If you have completed the expert database form on the Society's Web Site, you may already have an account. In that case, your login name and password will be sent to you by e-mail during the registration process. Your login name and password can be used on all of the Society's journal submission sites; there is no need to register again for each journal. You will be able to submit text, tables, and figures online. More detailed instructions, including acceptable file formats, are available on the site.

Publication charges are US$75.00 per printed page and will be billed when the paper is in proof. Partial or full subsidy of page charges may be granted to members of the American Fisheries Society (only) who certify that grant or agency funds are unavailable. Manuscript reviews are unaffected by a need for subsidy, but at least one author must be or must become a member of the Society *before* a subsidized paper can be published. Every paper published in the journal is subject to a $30 fee to offset handling costs associated with the proof. Authors may purchase reprints of their paper from the printer when they receive their proofs.

Manuscripts will be reviewed by at least two referees and evaluated for publication by the journal editor. However, manuscripts may be returned without review if they are of low quality or inppropriate for this journal. Reviewers and authors have the option of anonymity. Authors who wish to exercise this option should structure their manuscripts accordingly.

Manuscript review relies on volunteers and is occasionally a lengthy process; however, we strive to get evaluations of well-written papers back to authors within 8–12 weeks of submission. Authors should revise papers promptly, ideally within 3 months of the editor's evaluation. Papers that have not been returned within 6 months of that evaluation will be considered withdrawn. A ''revision''

completed after that time should be sent to the Journals Manager as a new submission.

## Manuscript Preparation

*Format.*—Manuscripts must use line spacing of at least 1.5 throughout. Use a standard 12-point print font. Use boldface type only to indicate first-level heads and vectors. Use an italic font and not underlining to indicate italics.

*Conventions.*—Avoid solid capital letters except for acronyms, which, along with abbreviations and symbols (including numerals), should never begin a sentence. Use an italic font only for scientific binomials (other Latin words and phrases are *not* italic), second- and third-level subheadings, single-letter variables and constants in mathematics and statistics, and for *occasional* emphasis.

Spell out single-digit numbers unless they are used with units of measure or are directly compared with a larger number: four trials; 5 cm, 3 years; 8 infected and 16 noninfected fish. Use numerals for decimal fractions and numbers of two or more digits: 0.4 times; 17 tanks; 326 samples; however, spell out any number that begins a sentence. Use commas in numbers of 1,000 or greater; use 0 before decimal fractions (0.05).

Use the 24-hour clock for diel time (and spell out ''hours''): 1435 hours, not 2:35 p.m. Calendar dates can be formatted: day month year (17 July 1993) or month day, year (July 17, 1993); select one style and use it consistently throughout the paper, including tables and figures. ''Julian Day'' should not be used to indicate day of the year.

Either metric or English units of measure may be used, but not a mixture; exceptions are made for a few ''hybrid'' terms still in common aquacultural use (e.g., grams of medication per pound of feed, g/lb; milliliters of chemical per gallon of water flow per minute, $mL \cdot gal^{-1} \cdot min^{-1}$). When one unit appears in the denominator, use a slash (12 oz/gal); use negative exponents and product dots for compound denominators ($26.4\ g \cdot m^{-1} \cdot h^{-1}$). A list of symbols and abbreviations that may be used in the journal without definition is provided at the end of this guide; all others must be defined at first use; for example, ''1,000 $\times$ gravity (*g*)'' at first use, and ''1,000 *g*'' thereafter.

Our standard for word definition and spelling is *Webster's Third New International Dictionary,* as updated by the latest edition of *Merriam Webster's Collegiate Dictionary*. *Writing for Fishery Journals,* edited by John Hunter (1990, American Fisheries Society), contains an excellent chapter on graphic and tabular display of data; other chapters provide advice about statistics and word usage.

For taxonomic and vernacular names of North American fish species, we follow the American Fisheries Society's most recent edition of C*ommon and Scientific Names of Fishes from the United States and Canada.* For other fish and invertebrate species, we encourage authors to follow the Society's companion publications: *World Fishes Important to North Americans,* and *Common and Scientific Names of Aquatic Invertebrates from the United States and Canada.* (*Mollusks,* 2nd edition, *Decapod Crustaceans,* and *Cnidaria and Ctenophora* currently are available in the latter series.) Our standards for chemical names are the current editions of the *Merck Index* (Merck & Co., Rahway, New Jersey) and *Enzyme Nomenclature* (Academic Press, San Diego, California). Geneticists should use the ''Gene Nomenclature for Protein-Coding Loci in Fish'' by J. B. Shaklee et al. (*Transactions of the American Fisheries Society* 119:2–15, 1990).

*Title, abstract, text.*—Manuscripts normally should be assembled in this order: title, authors, and addresses (on one page); abstract (on the second page); introduction, methods, results, discussion, acknowledgments (run-in on successive pages); references; all text footnotes (including address changes); appendixes; tables; figure captions; figures. Some variations of this list can be adapted to particular papers. Number every page (including title page) in sequence.

Titles of papers should be clear and concise. Authors of articles (only) may suggest a short title or running head not exceeding 45 characters and spaces. All articles, communications, and technical notes require abstracts. The abstract should be a single paragraph of 200–300 words for articles (75–200 words for other papers) that concisely states why you did your study, what you did, what you found, and what your results mean. Literature citations and footnotes are not allowed in abstracts; statistical details and abbreviations should be used sparingly.

The text should be clear and concise and should summarize information given in tables and figures, not list the details presented in them.

*References.*—The name-and-year system is used for literature citations in the text (Smith and Carline 1983, 1987; APHA et al. 1992; Boyd 1997; Tipping 1998a, 1988b; Tomasso et al., in press); citations are listed chronologically in a sentence. Both authors are cited if there are only two, but the first author plus ''et al.'' is cited if there are three or more. In the References, entries are listed alphabetically by author(s) first, then chronologically for two or more papers by the same author(s). Multiple listings for the same author(s) in the same year are distinguished by lowercase letters after

the year: 1986a, 1986b. Substitute ''in press'' for the year if a paper has been accepted for publication but page numbers are not yet available. Spell out all elements of each entry, *including journal titles.* Authors are responsible for the accuracy of references. Examples of common citation formats for serials, books, and reports follow.

APHA (American Public Health Association), American Water Works Association, and Water Environment Federation. 1992. Standard methods for the examination of water and wastewater, 18th edition. APHA, Washington, D.C.

Campton, D. E. 1995. Genetic effects of hatchery fish on wild populations of Pacific salmon and steelhead: what do we really know? Pages 337–353 *in* H. L. Schramm, Jr. and R. G. Piper, editors. Uses and effects of cultured fishes in aquatic ecosystems. American Fisheries Society, Symposium 15, Bethesda, Maryland.

Novotny, J. F., and J. W. Beeman. 1990. Use of a fish health condition profile in assessing the health and condition of juvenile chinook salmon. Progressive Fish-Culturist 52:162–170.

Turner, J. F., R. N. Smith, and G. B. Edwards. 1989. Fish and egg distribution report of the national fish hatchery system. U.S. Fish and Wildlife Service, Fiscal Year 1989/Report 24, Washington, D.C.

We do not allow reference to progress reports, to unpublished papers, to abstracts of papers given at conferences, or to manuscripts in preparation or under review—except to acknowledge (in the acknowledgments section) intellectual debt. References to unpublished data and personal communications should be done parenthetically in the text, giving the initials, surname, and affiliation (not address) of the source; for example, (E. C. Jones, U.S. Fish and Wildlife Service, personal communication). Obtain written permissions from the appropriate people to cite unpublished data and personal communications, and be prepared to show such letters to the editor.

*Tables.*—Organize tables to convey the greatest amount of coherent information with the least amount of wasted space. We do not print tables broadside (landscape) in the journal, but we will split wide tables across facing pages. Horizontal rules are seldom needed in the body of a table; verticle lines are never allowed. Please delete them.

Use footnotes (indicated by lower case superscript letters, beginning with ''a'') or table captions to identify nonstandard symbols and abbreviations. Use a zero in front of the decimal numbers smaller than one; pay attention to significant digits. To indicate statistical differences, use lowercase letters, set on line; to avoid confusion with footnotes, begin with ''z'' and work backward through the alphabet.

*Figures.*—The *x*- and *y*-axes on figures should be labeled clearly; labels should be placed close to the axes, and labels on the *y*-axis should be placed sideways so they run from the bottom to the top of the graph. Avoid black borders and 3-dimensional charts. Keep outliers (e.g., keys and scale bars) inside the borders of the figure, and keep white space between panels to a minimum. Remember that most figures will be reduced to fit on the journal page, and reduction can cause symbols and shading to look alike, dashed lines to look solid, and dotted lines to disappear. Use the same font type for all figures and keep font sizes similar with no more than 2–4 points difference in size from smallest to largest; avoid bold lettering, which tends to fill in on reduction.

Print photographs on glossy paper with good contrast and mount photos on paper or on flexible card. Add scale bars to photomicrographs, and place any bars, labels, or symbols at least 4 mm inside the outer edge of the photograph. Color photos will be printed in black and white unless the author has made prior arrangements with the Journals Manager to cover the additional cost of color printing.

## Symbols and Abbreviations

The following symbols and abbreviations, as well as others approved for the Système International d'Unités (SI), are used in the *North American Journal of Aquaculture* without definition. All others must be defined at first mention.

*Prefixes*

| | |
|---|---|
| giga ($10^9$) | G |
| mega ($10^6$) | M |
| kilo ($10^3$) | k |
| milli ($10^{-3}$) | m |
| micro ($10^{-6}$) | μ |
| nano ($10^{-9}$) | n |
| pico ($10^{-12}$) | p |

*Time and Temperature*

| | |
|---|---|
| day | d |
| degrees Celsius ([°F − 32]/1.8) | °C |
| degrees Fahrenheit ([1.8 × °C] + 32) | °F |
| hour (spell out for diel time) | h |
| minute | min |
| second | s |

Spell out year, month, week.

*Weights and Measures (Metric)*

| | |
|---|---|
| centimeter (0.394 in) | cm |
| deciliter | dL |
| gram (0.0353 oz) | g |
| hectare (2.47 acres) | ha |
| kilogram (2.20 lb) | kg |
| kilometer (0.622 mi) | km |
| liter (0.264 gal, 1.06 qt) | L |
| meter (1.09 yd, 3.28 ft, 39.4 in) | m |

Spell out metric ton. (1,000 kg, 2,200 lb).

*Weights and Measures (English)*

| | |
|---|---|
| cubic feet per second ($0.0283\ m^3/s$) | $ft^3/s$ |
| foot (30.5 cm) | ft |
| gallon (3.79 L) | gal |
| inch (2.54 cm) | in |
| mile (1.61 km) | mi |
| ounce (28.4 g) | oz |
| pound (0.454 kg, 454 g) | lb |
| quart (0.946 L) | qt |
| yard (0.914 m, 91.4 cm) | yd |

Spell out acre (0.405 ha) and ton (2,000 lb, 907 kg).

*Mathematics and Statistics*

| | |
|---|---|
| all standard mathematical signs, symbols, and abbreviations | |
| base of natural logarithm | *e* |
| common test statistics (*F*, *t*, etc.) | |
| correlation or regression coefficient (multiple) | *R* |
| correlation or regression coefficient (simple) | *r* |
| covariance | cov |
| degree (angular) | ° |
| degrees of freedom | df |
| expected value | *E* |
| logarithm (specify base) | log |
| minute (angular) | ′ |
| not significant | NS |
| percent | % |
| probability | *P* |
| probability of type I error (false rejection of null hypothesis) | $P_\alpha$ or α |
| probability of type II error (false acceptance of null hypothesis) | β |
| radian | rad |
| sample size | |
| population | *N* |
| sample | *N* or *n* |
| second (angular) | ″ |
| standard deviation | SD |
| standard error | SE |
| steradian | sr |
| variance | |
| population | *V* or Var |
| sample | var |

*Physics and Chemistry*

| | |
|---|---|
| all atomic symbols | |
| alternating current | AC |
| ampere | A |
| becquerel | Bq |
| calorie (joule is preferred) | cal |
| candela | cd |
| chemical acronyms listed in Webster's dictionaries (DDT, EDTA, etc.) | |
| coulomb | C |
| dextro configuration | D |
| dextrorotary | *d* |
| direct current | DC |
| electron volt | eV |
| equivalent | eq |
| farad | F |
| footcandle (10.8 lx) | fc |
| gray | Gy |
| hertz | Hz |
| horsepower (746 W) | hp |
| hydrogen ion activity (negative log of) | pH |
| joule | J |
| levo configuration | L |
| levorotatory | *l* |
| lumen | lm |
| lux (0.0929 fc) | lx |
| molar | M |
| mole | mol |
| newton | N |
| normal | N |
| ohm | Ω |
| ortho | *o* |
| para | *p* |
| pascal | Pa |
| parts per million (per $10^6$; in the metric system, use mg/L, mg/kg, etc.) | ppm |
| parts per thousand (per mille, per $10^3$) | ppt, ‰ |
| siemens (= mho, $\Omega^{-1}$) | S |
| tesla | T |
| tris(hydroxymethyl)-aminomethane | tris |
| volt | V |
| watt | W |
| weber | Wb |

*General (Some Are Restricted)*

| | | |
|---|---|---|
| compass directions (maps and coordinates): | east | E |
| | north | N |
| | south | S |
| | west | W |
| corporate suffixes: | | |
| Company | | Co. |
| Corporation | | Corp. |
| Incorporated | | Inc. |
| Limited | | Ltd. |
| District of Columbia | | D.C. |
| et alii | | et al. |
| et cetera | | etc. |
| filial generation | | F |
| for example | | e.g., |
| international unit | | IU |
| months (in tables, figures): first three letters (e.g., Feb, Jun, Sep) | | |
| ploidy | | n |
| sex (tables, figures, hybrid crosses): | female | ♀ |
| | male | ♂ |
| that is | | i.e., |
| United Kingdom | | UK |
| United States (adjective) | | U.S. |
| United States of America (noun) | | USA |