1. Titles and headings

Capital letters (uppercase) are used only for the first word and proper names.

This style applies to:
- Title of paper (bold font)
- 2nd-level headings (flush left, separate from paragraph, italicized)
- 3rd-level headings (at the beginning of the paragraph, indented, italicized, and followed by a period and an en dash)
- Column headings in tables
- Items in the left-hand column (stub column) in tables
- Axis labels on graphs (except for special terms and acronyms)

Exception: 1st level headings (center, bold) have all prominent words capitalized.

Note: Taxonomic papers are treated differently to accommodate a variety of headings. Consult recent issues or the Editor for guidance.

2. Spelling and FWS word use

- Use American spelling only.
- International units like “meter” and “liter” should be spelled thus when written in full.
- “Acknowledgements” has three e’s.
- “Substrate” or “substratum” is the decision of the author; usage must be consistent. “Substratum” must be used for habitat if the paper also describes a substrate in the sense of a metabolic resource.
- en dash (used for “to” in a range or for a relationship such as “predator–prey”; also used for blank entries in a table): type as 2 consecutive hyphens
- em dash (used occasionally instead of parentheses or a comma to set off part of a sentence): type as 3 consecutive hyphens

3. Punctuation

- 1st, 2nd, and 3rd items
- e.g., i.e., et al., min
- 1980s PCBs Dr Jr PhD USA UK
- Smith, A. B., and C. D. Jones. 1990. A method ...
- Smith1, Jones2, and White
- “The stream and its valley”, Hynes’s 1975 article, was one of the first ...
- Complex adjectives: “a 500-μm mesh”, “a 500-μm-mesh net”, “an out-of-date concept” but “the mesh was 500 μm” and “the concept is out of date”

4. Abbreviations and symbols

- s min h d wk mo y °C 75%
- μm mm cm km μg kg mL
- (±1 SE) SD CV CI RMS MS SS df ̄x n p r R F t
- “Fig.” for “Figure” and “Figs” for “Figures” except when beginning a sentence

5. Numbers and units

- All numbers for items that can be counted or measured should be expressed as numerals, even single digits: 3 hypotheses 7 samples 52 genera 3rd 7th 52nd 4-fold 1000×

Exceptions:
- A number at the beginning of a sentence (or recast the sentence)
- Adjacent numeric expressions: “We took eight 4-L samples” (or “We took 8 samples of 4 L each”)
- A number not counted or measured: “The summer sample had more juveniles than the winter one” and “First, I shall show … and second, I shall argue …”
- No comma in 1000, but 10,000 and 100,000
- Zero before decimal point: 0.1 0.001
- Space between number and unit: 12 min
- mg/L cm/s no./m² but mg m⁻² y⁻¹

6. Mathematical expressions

- Do not use centered dots or asterisks for multiplication. Do not use multiplication symbols for simple expressions: A = ½bh, not A = ½ × b × h, or A = ½ × b × h, or A = ½ × b × h.
- Inline equations should not be broken across lines:

A sphere has volume \( V = \frac{4}{3}\pi r^3 \), where \( r \) is the radius.

**not**

A sphere with radius \( r \) has volume \( V = \frac{4}{3}\pi r^3 \)
Longer expressions can be displayed:

\[ \frac{dP}{dt} = kP \left(1 - \frac{P}{K}\right) \left(1 - \frac{m}{P}\right) \]

- Use a slash / and sufficient parentheses for inline fractions: \( N = (ab)/(cd) \) not \( N = ab/cd \). Build up displayed fractions, or use sufficient parentheses:

\[(a + b)^n = \sum_{k=0}^{n} \frac{n!a^{n-k}b^k}{k!(n-k)!}\]

or

\[(a + b)^n = \sum_{k=0}^{n} \frac{(n!a^{n-k}b^k)}{k!(n-k)!}\]

not

\[(a + b)^n = \sum_{k=0}^{n} n!a^{n-k}b^k / k!(n-k)!\]

For more complex expressions, consult a style guide that deals explicitly with mathematics (e.g., see Section IV, Parts C, D of the American Institute of Physics style guide at www.aip.org/pubservs/style/4thed/toc.html).

7. Italics
- Genus and species should be italicized, except in a subheading where they should be in regular (Roman) font.
- Statistical parameters (see Section 4)
- Occasional essential emphasis
- Names of books and journals in the text of a manuscript or book review
- Certain headings (see Section 1)

The following are not italicized:
- et al. e.g. i.e. cf. per se sensu vs
- in situ a priori a posteriori ad libitum post hoc

8. Figures
- Lettering in Figures (maps, graphs, diagrams, photographs) should be in a sans serif font, such as Helvetica.
- Names of genera and species, and statistical parameters (see Section 4), should be printed in italic font.
- Only the 1st letter in a phrase (axis labels, keys, “text” within a figure) should begin with a capital letter, except for special terms and acronyms.
- Tick marks go outside axes.
- Do not put boxes around figures, individual panels within figures, or legends. The exceptions are ordination plots, legends in ordination plots, or cases in which unboxed legends could cause confusion.
- In multi-panelled graphs, do not repeat numbers and axis labels on all axes. Have tick marks on all axes, but numbers and axis labels on only the bottom and left axes (unless different panels have different values). Label individual panels with upper-case letters (no parentheses or periods).
- Font size should be consistent among graph axes and among graphs with similar formats. The lettering in keys should not be smaller than lettering on axis labels.
- A series of graphs with the same variable on the x axis (or with a similar variable and similar scale) should be identical in width.
- Figures will be sized to 1 column width (8.4 cm) whenever possible. When necessary, wider figures (12.7 or 17.8 cm) can be accommodated. All text should be legible at these sizes.

9. Miscellaneous
- State and Province names are spelled out.
- In Canada, postal code follows country name.
- “Jr” is used only where a first name might be written in full, as on a title page, but not in the Literature Cited or Table of Contents.
- Personal communications are written: “(A. N. Expert, University of Somewhere, personal communication)”.
- Generic names should be in full at the beginning of a sentence.
- Statistical packages should be referenced in the Methods using a parenthetical phrase (version/release, Company, City). Only a specific reference to the text accompanying the software is listed in the Literature Cited.
- Items in tables that are defined or explained in footnotes should be marked by a superscript small (lowercase) letter.
- Footnotes under tables begin with a capital (uppercase) letter but do not end in a period unless absence would cause confusion.