



JOURNAL OF THE AMERICAN WATER RESOURCES ASSOCIATION (JAWRA)

JAWRA's style and policies are updated periodically and all authors are advised to read these instructions BEFORE submitting a manuscript, even if they have previously published in JAWRA. All submissions and reviews are processed through ScholarOne™ Manuscripts (<https://mc.manuscriptcentral.com/jawra>).

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WHAT'S NEW?

This version adds some policies and procedures and updates outdated information.

1. New REQUIRED section: Data Availability Statement.

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PART I – Policies and Procedures

PUBLICATION CHARGES

JAWRA recognizes an obligation to the water community and to its authors to distribute the knowledge contained within its pages as widely as possible. To accomplish this in an economically sustainable manner, an article processing fee (APF) partially covering the costs of producing JAWRA is assessed at the time a paper is accepted for publication. Papers are not published until the APC is paid in full. *Rates are subject to change and charges will be incurred at the prevailing rates at the time of acceptance.* Current rates are:

Article Type	AWRA Members*	Non-members
Technical Paper/Literature Review	\$1,425	\$1,900
Technical Note/Water Commentary	\$750	\$1,000
Discussions	\$225	\$300
Errata	\$90	\$120
Open Access	\$3,000 additional [see below for details]	

*To receive the 25% AWRA member discount, at least one author must be a professional, premier, or designated representative of a partner member when the paper is originally submitted and maintain membership through publication. **Note:** When submitting payment for a JAWRA manuscript by check, the manuscript number (MS#) must be included or payment will be returned.

Open Access

This is a subscription journal that offers an open access option. These articles are treated the same as any other article. They go through the journal's standard peer-review process and will be accepted or rejected based on their own merit. After an article's acceptance, authors are offered the option to pay an additional Article Publication Charge (APC) to make their article open access. **All standard publication charges will still apply; a member discount is not available for this option.** You can read more about open-access APCs and whether you may be eligible for waivers or discounts, through your institution, funder, or a country waiver for publishing your paper via the open access option.

AUTHORSHIP

All persons listed as an author of a paper are expected to have contributed substantially to its production and to be knowledgeable about the entire paper, including drafting or revising it for important intellectual content and reviewing and approving the final version to be published. Minor contributors should be mentioned in the acknowledgments section. **If there is any change in authorship during revisions, an explanation MUST be provided in the cover letter.** The final decision regarding the authorship change rests with the Editor-in-Chief of the journal.

In cases where authors wish to change their name following publication, the journal will update and republish the paper and redeliver the updated metadata to indexing services. Our editorial and production teams will use discretion in recognizing that name changes may be of a sensitive and private nature for various reasons including (but not limited to) alignment with gender identity, or as a result of marriage, divorce, or religious conversion. Accordingly, to protect the author's privacy, we will not publish a correction notice to the paper, and we will not notify co-authors of the change. Authors should contact JAWRA's editorial staff at jawra@awra.org with their name change request.

COPYRIGHT

The submitting author is required to complete a Copyright Transfer Agreement (CTA) assigning copyright to AWRA after the manuscript has been accepted and sent to the publisher for publication. The submitting author will sign on behalf of all co-authors and is required to obtain their written permission to do so. The forms are collected online via the publisher's system; authors receive instructions at the appropriate time.

You may choose to publish under the terms of the journal's standard copyright agreement, or Open Access under the terms of a Creative Commons License.

Standard re-use and licensing rights vary by journal. Note that certain funders mandate a particular type of CC license be used. This journal uses the CC-BY, CC-BY-NC, and CC-BY-NC-ND Creative Commons License.

The CTA allows, under certain conditions, for sharing the paper with colleagues and placing versions of the paper on a private website – **but NOT on a public website**. Please read the CTA carefully, as we expect authors to adhere to its stipulations. Please note the provisions for U.S. Government employees.

As our publisher, Wiley goes to considerable trouble to make sure JAWRA papers are properly indexed by search engines. Placing unauthorized copies online interferes with this effort by confusing search engines and may actually hurt the chances of your paper being cited. For more information on Article Sharing Policies, see here: <https://authorservices.wiley.com/author-resources/Journal-Authors/Promotion/article-sharing-policy.html>

Self-Archiving Definitions and Policies: Note that JAWRA's standard copyright agreement allows for self-archiving of different versions of the article under specific conditions.

REVIEW AND PUBLICATION PROCESS

All papers are reviewed by at least two (usually three) reviewers selected from names suggested by authors, a list of reviewers maintained by JAWRA, and other experts identified by the associate editors. **Names of the selected reviewers are not disclosed to authors.** The editor-in-chief and

associate editor(s) evaluate reviewer comments. A list of questions reviewers are asked is available for viewing at <http://www.awra.org/jawra/reviewquestions.html>. The review process is outlined as follows:

Step 1. Administrative Review

- a. Author submits paper via ScholarOne Manuscripts.
- b. Managing Editor (ME) reviews submission for completeness.
 - o Incomplete or incorrect submissions are returned to the author for corrections.
 - o Complete submissions are forwarded to the editor-in-chief (EIC) for consideration.

Step 2. Initial Editorial Review

- a. EIC reads the paper to determine its suitability for the journal.
 - o Unsuitable papers are returned to the author without peer review. (Papers not on an appropriate subject or having little chance of receiving a favorable recommendation from reviewers will not be sent out for peer review.)
 - o Suitable papers are assigned to an associate editor (AE).

Step 3. Secondary Editorial Review

- a. AE reads the paper to confirm suitability for the journal.
- b. Unsuitable papers are returned to the EIC with a recommendation to return to the authors without peer review.
- c. Suitable papers are sent for peer review.

Step 4. Peer Review

- a. AE secures at least two (usually three) external reviewers who are subject matter experts in the area.
- b. Reviewers evaluate the manuscript using the online JAWRA score sheet. (See Reviewer Guidance at <http://www.awra.org/jawra/reviewquestions.html> for more detail.)
- c. Once all required reviews are received, the AE evaluates the reviews and the manuscript and makes a recommendation to the EIC.
- d. EIC evaluates the reviews and the AE recommendation and makes a decision:
 - o Reject - the paper is rejected for publication in JAWRA.
 - o Major Revision - return to author for major revisions which will require further peer review (step 4b, usually with the same reviewers if available).
 - o Tentative accept (TA) - return to the author for minor revisions to be reviewed by one or both editors. Papers returning from a decision of TA should have all files publication ready.
 - o Accept - the paper is accepted for publication in JAWRA.

TIP!

One of the best things you can do to improve your manuscript's chances of acceptance is to have your draft copyedited BEFORE you submit it to us! This is particularly important if English is not your first language or your writing skills are weak. Manuscripts with non-standard grammar tend to score poorly with reviewers and are more likely to be rejected or returned without review.

Step 5. Author Revisions

- a. Author revises paper as required in the decision letter and submits revision for further review as outlined above. Revisions undergo steps 1 & 4.
 - o Papers returning from a decision of major revision are reviewed by the ME for completeness and the ME forwards the paper to the reviewers for further review.
 - o Papers returning from a decision of TA are reviewed by the ME for completeness, conformation to JAWRA style, and publication readiness of all files.
- b. This process repeats until the EIC either rejects or accepts the paper for publication; usually no more than two rounds of revisions are allowed.

Step 6. Final Decision

- a. Papers receiving a decision of reject are no longer under consideration of publication by JAWRA and the file is closed.
- b. Papers accepted for publication by JAWRA continue to step 7.

Step 7. Publication

- a. Papers accepted for publication are sent to the publisher (Wiley) by the ME and publication details are provided to the author.
- b. The AWRA Managing Editor will issue an invoice for the article processing charge within 7-10 business days of acceptance.
- c. The author is notified once the manuscript has been received by the publisher for copyediting. At this point, authors may track production through Wiley's author services (<http://authorservices.wiley.com/bauthor/>). Copyright transfer agreements (CTA) are completed online at this time. Electronic proofs are sent to the author about two to three weeks after the article is sent to production.
- d. Once proof corrections and layout is complete, the CTA received, and publication charges are paid in full, the paper is published online in Early View prior to issue publication. Issue publication follows as communicated by the ME in Step 7a.

Publication

JAWRA is published bimonthly (six times per year) and papers are generally published in the order in which they are accepted. Papers which are part of a [*featured collection*](#) (see below) are published as a group in an issue. The editor-in-chief may advance the order of publication for a paper on a topic of current public interest.

JAWRA is published online, with the option to purchase a hard copy. See Wiley Online Library (www.jawra.org) for subscription and distribution information. AWRA members should email info@awra.org to request a hard copy.

With a few exceptions, papers are placed in Early View [online publication in advance of issue publication] as soon as they complete typesetting, the copyright form is received, and all charges are paid. This can take place several months before they are available in an issue. Once online in Early View, a paper is considered published in final form and may not be revised [this is the version

of record]; any corrections will require an erratum and may incur a publication charge per the rate schedule. Early View papers have a unique DOI (digital object identifier) and are fully citable.

AWRA is happy to cooperate with authors' organizations in issuing news releases about forthcoming JAWRA articles. Please contact the editorial staff at jawra@awra.org.

Discussion and Reply

All published technical papers and notes are open for discussion for a period of 6 months from issue publication, unless the editor-in-chief extends this period. Discussions are limited to dealing directly and specifically with issues raised in the published JAWRA paper. Discussions should not introduce new information heretofore not published in a peer-reviewed forum (e.g., JAWRA or a similar journal). Discussions should be as brief and concise as possible.

Discussion/Reply manuscripts follow a similar review process as for original papers, but reviewers will be assigned only if needed to adjudicate a technical matter. A copy of the draft discussion will be provided to the authors of the paper under discussion to prepare a reply. Timely replies will be printed in the same issue as the discussion. However, discussions and replies will be placed in Early View as soon as each individually completes production.

Authors submitting a Discussion should reference the published paper in their cover letter (provide paper number and issue published; if on Early View state this instead) and should cite the paper within the Discussion manuscript.

We realize the exchange of Discussion and Reply can be stressful and contentious for those concerned. While we make every effort to allow viewpoints to be aired, we also hold authors to strict standards of [professionalism and civility](#). See the relevant section below.

Publication charges apply to discussions; no publication charges are assessed for the reply.

Featured Collections and Series

A *featured collection* [formerly known as a *special issue*] is a group of three or more related papers on a specific topic organized by guest associate editors and published together in a single issue. Large featured collections may be split over multiple issues as appropriate.

A *featured series* is a group of three or more related papers on a specific topic coordinated by guest associate editors and published either individually or in groups over several issues. The potential to tie up the papers within a featured series as a virtual collection also exists and can be explored on a case-by-case basis.

Collection/series papers are submitted during a scheduled time period as determined by the editorial office in consultation with the organizing editors. Authors participating in a collection or series should include the name of the collection/series in their cover letter and submit during the time period stipulated by the guest associate editors. Papers in a featured collection/series are held to the same high standards as regular JAWRA submissions and go through the full JAWRA review process. Invitation to submit a paper for possible inclusion does not guarantee acceptance. All standard publication charges apply.

While featured collections/series often arise out of sessions at AWRA conferences, they do not need to be tied to an AWRA conference. The guest associate editors carefully choose papers to cover the subject in breadth and depth. The guest associate editors recruit authors and reviewers, and help keep all involved on schedule. If you would like to propose a featured collection or series, please contact the JAWRA editor-in-chief (JAWRA-EIC@awra.org).

Reviewer Suggestions

ScholarOne Manuscripts allows authors to name “recommended” (or “opposed”) reviewers. We encourage authors to use the Reviewers area to list three potential proficient reviewers in their field, as finding available, expert reviewers often is difficult. The term “recommended” is assigned by the system and does not suggest bias; JAWRA views these names as suggestions only. The editorial team may or may not accept any of the recommendations, the only criteria being fairness, objectivity, and knowledge.

PROFESSIONALISM AND CIVILITY

All papers must comply with the following principles of professionalism and civility.

- Conclusions or claims must be based upon observable or documented facts. Speculation or personal opinion, if present at all, must be clearly identified.
- It is permissible to criticize ideas, writings, and actions, but not to make personal attacks upon individuals or organizations.
- Except for relevant, factual content (*e.g.*, attributable quotes, pictures showing some condition), language and figures must not offend a person of ordinary sensibilities.
- Authors must disclose any interests or affiliations that could be perceived as creating a conflict of interest.
- Commercial products or activities may be mentioned for informational purposes only and without giving the appearance of endorsing or promoting them.
- Authors should be careful not to plagiarize or infringe on copyrights; read Wiley's [Guidelines on Publishing Ethics](#) before submitting your paper.

Diversity, Equity, and Inclusion

The Journal of the American Water Resources Association aims to foster inclusion and diversity that reflects disciplinary, human, and geographic diversity. We recognize that many groups are underrepresented in research, including women, people of color, and socio-economic disadvantages, we are committed to increasing diversity and inclusion in research and publishing from applicants of all ethnicities, races, colors, religions, sexes, sexual orientations, gender identities, national origins, disabilities, ages, and/or other individual status.

Reviewing Papers

Professionalism involves not only writing papers but helping to review the work of others as well. ScholarOne Manuscripts will, by default, register authors as reviewers. However, reviewers are always free to decline an invitation to review a paper.

Reviewers are expected to disclose to the inviting editor any conflicts of interest (e.g. relationships to any of the authors; competing interests, etc.)

Reviewers must keep the manuscript confidential and should not discuss the work with any persons except the editorial team; reviewers are not to contact the authors of the paper.

JAWRA employs a single-blind review process, which means the identity of the reviewers is kept confidential and is not revealed to the authors while the reviewers know who authored the paper. As such, reviewers need to be careful not to reveal their identity as part of the review or in any documents submitted (e.g., purge any identifying information from document properties; do not include your name or initials in a file name).

While reviewer identity is kept confidential, JAWRA seeks to recognize the contributions of reviewers and provide recognition to outstanding reviewers. The journal publishes a list of all reviewers for papers published in a given year in the December (last) issue of the year. The journal also provides reviewers an opportunity to document their reviewing contributions with Publons (www.publons.com). In addition, a select number of outstanding reviewers will be recognized for their efforts during the AWRA Annual Conference held in November of each year.

For more details on being a JAWRA reviewer, visit <http://www.awra.org/jawra/becomereviewer.html>.

Digital Photo Manipulation

It is critical for digital photos within papers to accurately represent what they claim to portray. Photos may be cropped and adjusted for normal photographic controls such as exposure, contrast, and color balance, but may not be "cloned" or similarly manipulated to falsify the content. Exceptions to this rule must be mentioned in the figure caption; in such cases, we suggest including the original photo as an electronic attachment (supporting information).

Contested Place Names

The names of geographic locations and even countries are not always universally accepted. In these cases, JAWRA policy is to use the name preferred by the author. Where necessary to avoid confusion, the editor-in-chief will add a neutral clarifying note.

Prior Publication

Preprints. JAWRA will consider for review articles previously available as preprints on non-commercial servers such as ArXiv, bioRxiv, psyArXiv, SocArXiv, engrXiv, etc. Authors may post the submitted version of their manuscript to non-commercial servers at any time. Authors are requested to update any pre-publication versions with a link to the final published article.

Proceedings. Publishing a paper or abstract in a conference proceedings does not necessarily disqualify it from publication in JAWRA. Several factors considered are: (1) quality and completeness; (2) copyright; disclosure; and (4) level of prior exposure. Authors who wish us to consider work based upon proceedings are encouraged to discuss the matter with the JAWRA editor-in-chief (JAWRA-EIC@awra.org) prior to submittal.

SPECIAL ARTICLE TYPES

Literature Reviews

JAWRA publishes **invited** Literature Review articles which will synthesize recent literature on an emerging topic of significant interest to the broad water community. Literature Reviews should not be just limited to summarizing existing literature but characterize significant research strands, provide critical insights, and identify crucial data and knowledge-gaps in the literature. Review articles must also address how current research is seeking to address broad questions of policy relevance and what new information or research foci are necessary to help policy makers create innovative policies and practices.

There is no word limitation on review articles but they must be written as succinctly as possible. The standard limits apply to the Title and Abstract; see relevant sections below. Review articles are treated as technical papers and will be peer reviewed according to normal JAWRA practices and subject to standard publication fees.

Invitations to submit Literature Reviews are made by the editor-in-chief (EIC) in consultation with the associate editor for Water Commentaries and Reviews. Invitation does not guarantee acceptance for publication. Authors interested in seeking an invitation to submit a Literature Review may submit a one- page proposal for the article to the EIC.

Water Commentaries

JAWRA publishes **invited** Water Commentaries which provide new insights or concepts relevant to a broad range of multidisciplinary water researchers and practitioners. Water Commentaries will build

upon existing water-related research and will offer an opportunity for authors to present cutting edge ideas in a format not bound by restraints of traditional technical papers.

Water Commentaries should be written in a style understandable to a broad multidisciplinary audience. The **text is limited to 4,000 words**, excluding the title page (title, author list, author information, abstract, key terms), Supporting Information description (if present), Acknowledgements, or Literature Cited; **tables and figures are limited to a combined total of 5**. The standard limits apply to the Title and Abstract; see relevant sections below. All manuscripts will be peer-reviewed according to normal JAWRA practices and subject to standard publication fees.

Invitations to submit Water Commentaries are made by the editor-in-chief (EIC) in consultation with the associate editor for Water Commentaries and Reviews. Invitation does not guarantee acceptance for publication. Authors interested in seeking an invitation to submit a Water Commentary may submit a one- page proposal for the article to the EIC.

Part II – Preparing a Manuscript

ARTICLE TYPES

JAWRA articles may be one of six types as outlined below. All articles, regardless of type, are subject to full peer review.

Technical Paper. This type of article presents the results of recent research, including case studies, or offers facts-based analysis of a timely and important topic. Most articles in JAWRA are Technical Papers.

Technical Note. This is a short, narrowly-focused communication on a topic of interest. Examples of appropriate topics for a Technical Note would be to correct a common misperception about a sampling technique, add a recollection of an historical event, or report on an improvement to an existing modeling code or technique. Technical Notes are subject to the same word count and graphic limits as Water Commentaries; see the [Water Commentaries](#) section above for details.

Literature Review. This type of article is by invitation only and is discussed in detail [above](#).

Water Commentary. This type of article is by invitation only and is discussed in detail [above](#).

Discussion. A Discussion is a commentary on a Technical Paper or Technical Note recently published in JAWRA. It is limited to the material covered in the article in question and cannot add new research results not previously published.

Reply. A Reply is prepared by authors of a Technical Paper or Technical Note in response to a Discussion about their article. A timely Reply will be published in the same issue as the corresponding Discussion.

If you have a question as to the correct article type for your manuscript, please contact the editor-in-chief.

Style Note: JAWRA uses the Chicago Manual of Style 16th edition.

ABSTRACT

The abstract should briefly summarize, in **one paragraph limited to 1,500 characters including spaces and the label “Abstract:”**, the general problem and objectives, the results obtained, and the implications. Mention place and program names if they are important to the study. Do not include citations. Do not include details of methods, sampling, *etc.*, unless they are the main point of the paper. Use and define acronyms only if they appear more than once in the Abstract itself.

When submitting your manuscript in ScholarOne Manuscripts, be sure to copy and paste the Abstract into the field provided as this is not automatically completed. If changes are made in revisions, upload the amended Abstract.

Example (notice the section label is in line with the text):

“ABSTRACT: This study develops and tests...”

ACKNOWLEDGMENTS

Acknowledgements are included in a separately titled section, directly before the Literature Cited. This is the appropriate place for disclosing any affiliations that could be perceived as influencing the objectivity of the work (See [Professionalism and Civility](#)), acknowledging minor contributors, and for adding any disclaimers required by your employer.

TIP!

Many JAWRA articles are discovered online via their abstracts. On the Web, you have only a few seconds to grab the attention of a reader. Do not waste the first sentences of your abstract with introductory material. Get right to the point of telling what **you did** and what **you found!**

ACRONYMS

All acronyms are defined at first use within three distinct areas: (1) the abstract, (2) the body of the manuscript, and (3) the graphics [tables/figures]. In each area, acronyms are expanded at their first occurrence followed by the acronym in parentheses [*e.g.* water quality trading (WQT)].

1. The abstract is treated as a standalone piece and should only include acronyms if they are used more than once in the abstract itself.
2. The body of the manuscript should have acronyms defined at first use even if they were already defined in the abstract or a caption.
3. Acronyms are expanded at their first occurrence in either a table or figure caption, after which just the acronym may be used in all subsequent captions. This allows readers to understand the graphics without having to refer to the text.

NOTE: Avoid using acronyms in the title. See the [Title](#) section for more details.

APPENDICES

All appendices must have a title. Appendices are placed after the Conclusions and are part of the article. If there will be supplemental material available online but not within the article itself, include a [Supporting Information](#) section; see the relevant instructions below.

AUTHOR LIST AND INFORMATION

Author List

Although author information is listed in ScholarOne Manuscripts, the names may not be in the format you prefer and are not automatically transferred to the manuscript [or *vice versa*]. Therefore, in the manuscript, under the title, list the author names in the **exact form and order** you want them to appear. *Form* means using initials versus whole names; as an English language journal, the format is First/Given Name Last/Family Name [e.g. T.S. Eliot, Tommy Eliot, Thomas S. Eliot, or Thomas Stearns Eliot]. Provide author names as an in-line list and do not include any titles or degrees [e.g. Dr. or PhD].

All authors of the manuscript are to be entered into ScholarOne during the submittal process; failure to do so will result in the paper being returned to the submitting author for correction.

We have discussed with Wiley the possibility of showing author names in native characters. However, at this time we cannot guarantee such characters would be printed accurately, therefore we do not presently offer this service.

Author Information

Author information is entered below the author list and before the Abstract.

- Include department, institution, city, state, and country for **each** author; state name is to be spelled out, country name abbreviated.
- Insert each author's last/family name in parentheses after the department.
- Authors located at the same institution should be grouped together by department.
- Provide only one affiliation per author.
- Include an eMail address for the corresponding author **only** inserted at the end.
- Do not include phone numbers.
- Provide the information in paragraph form.

The example below presents a common situation; if you have any questions contact the managing editor.

Department of Basketball (Smith), Enormous State University, Bigten, Ohio, USA; Department of Sportsmanship (Hernandez, Liu), Smalltime University, Littletown, Ohio, USA; Recruitment Support

(Clark), Acme Consultants, Moneyville, Ohio, USA; and Department of Grants (Zhang) and Department of Red Tape (Jones, Herrera, Miller), Federal Agency, Washington, D.C., USA (Correspondence to Smith: smith@bigten.edu).

Sometimes authors change their affiliation during the course of preparing a paper. In this case, list the most appropriate affiliation (former or current) and give credit to the other employer in the Acknowledgements.

CITATIONS WITHIN TEXT

Proper citations are critical not only as a matter of professional courtesy, but make it easier and faster for reviewers to check a paper's references. All sources of data and information not original to the paper should be described, either as *published literature* or as an *informal reference*. It is important to recognize how these classes are defined and treated.

- [Published Literature](#), or formal citations, includes published materials available to future researchers. All entries have an author/compiler/editor/manager (person or organization), a date of publication, and title and publishing information to uniquely identify the materials. Contractor reports to a public agency fall in this category if they can be clearly and uniquely identified. Databases and websites may be included if fully citable.
- [Informal References](#) include everything else: personal communications (letters, notes, and conversations), unpublished reports, legal citations, databases, and websites.

Published Literature

Refer to published literature within the text by author(s) and date; for example, Black (1984) or (Black, 1984) or (Black, 1984; Green *et al.*, 2005). Use letters to differentiate citations in the same year, as Black (1984b). Though using the author's surname normally is sufficient, include an initial or given name when referencing multiple authors with the same surname: Black, P. (1984) and Black, A. (1984). Do not use a numbering system.

IMPORTANT: Every published literature reference within the text must have a corresponding entry in the [Literature Cited](#) section. **If you delete or insert a text reference during revision, be sure to update the Literature Cited section as well.** Please check this, as it is one of the most common errors found in copyediting.

INFORMAL REFERENCES

Letters, memos, and similar non-published materials are **not** included within Literature Cited. References to databases and websites are treated as informal references if they are not fully citable and already included in the Literature Cited section. Informal References are referenced as fully as possible in parentheses within the text. Example:

(Memo from AWRA Executive Vice President K.D. Reid to JAWRA Editor K.J. Lanfear, September 15, 2005, Subject: Wasn't that great water?)

Describe data sources with enough detail to lead a qualified researcher to an appropriate starting point in the database. **Dates of access are to be given** to help resolve any future updates in the source. Some examples of common databases are given below. You may designate a “default” source for groups of data, as in the second example:

(U.S. Geological Survey, National Water Information System. Accessed December 8, 2012, <http://waterdata.usgs.gov/nwis>.)

(U.S. Geological Survey, National Water Information System. Accessed June 2011 - December 2012, <http://waterdata.usgs.gov/nwis>. Unless otherwise noted all streamflow data in this paper are from this source.)

(U.S. Environmental Protection Agency, 2012. STORET. Accessed December 2012, <http://www.epa.gov/storet/>.)

Unpublished data citations should follow this example: (Moe Smoe, USEPA, 1999, unpublished data)

Unpublished report citations should follow this example:

(Acme Consulting, "Design Solutions for the Main Street Water Works", unpublished report for MegaWater, Inc., 2010.)

Legal citations should include sufficient information for the reader to identify the appropriate statute or case: (33 U.S.C. §403)

COMPUTER CODE

Except for short fragments, computer code should not be included within the text of a manuscript. Computer code may be submitted as separate files to accompany the online version of the paper so users can download the code as a text file (see [Supplemental Material](#) below).

COVER LETTER

A cover letter briefly summarizing the new contributions the manuscript makes to water resources literature is required and should be submitted in the space provided in ScholarOne Manuscripts. Also use the cover letter to advise us if you are submitting a multi-part paper, a manuscript for consideration of inclusion in a featured collection, *etc.*, or if there are any other special conditions we should consider. It is not necessary for the cover letter to repeat information already provided in ScholarOne Manuscripts. If there is any change in authorship during revisions, an explanation MUST be provided in the cover letter.

DATA AVAILABILITY

JAWRA recognizes the many benefits of archiving data for scientific progress and the concern with data availability is that any qualified researcher should be able to obtain your data to reproduce or check your results. JAWRA expects all datasets obtained from outside sources be identified within

the text and all original datasets used in the paper be placed into an appropriate archive available to the public.

JAWRA also expects you to archive all the data from which your published results are derived in a public repository. The repository chosen should offer guaranteed preservation (see the registry of research data repositories at <https://www.re3data.org/>) and should help you make it findable, accessible, interoperable, and re-useable, according to FAIR Data Principles (<https://www.force11.org/group/fairgroup/fairprinciples>).

JAWRA recommends using **HydroShare**, a domain-specific data and model repository established to advance hydrologic science by enabling individual researchers to easily share products resulting from their research, operated by CUAHSI hosted at www.hydroshare.org.

All accepted manuscripts are required to publish a data availability statement to confirm the presence or absence of shared data. If you have shared data, this statement will describe how the data can be accessed, and include a persistent identifier (e.g., a DOI for the data, or an accession number) from the repository where you shared the data. Authors will be required to confirm adherence to the policy. If you cannot share the data described in your manuscript, for example for legal or ethical reasons, or do not intend to share the data then you must provide the appropriate data availability statement. The journal notes that FAIR data sharing allows for access to shared data under restrictions (e.g., to protect confidential or proprietary information) but notes that the FAIR principles encourage you to share data in ways that are as open as possible (but that can be as closed as necessary).

Sample statements are available at <https://authorservices.wiley.com/author-resources/Journal-Authors/open-access/data-sharing-citation/data-sharing-policy.html>. If published, all statements will be included after the Conclusion and any appendices or supporting information.

DATES AND TIMES

The preferred date format is either, Month Day, Year (e.g. August 6, 2012), or the ISO Standard 8601 form, YYYY-MM-DD (e.g., 2012-08-06). Alternative forms, such as 6 August 2012, 6Aug12, may be used in figures if graphics programs or space requirements do not allow the preferred form. Use of non- ISO numerical forms, such as 6/8/12 or 8/6/12, is discouraged because of confusion between American and European notations.

The preferred time format is 24-hour notation, or 20:15, not 8:15 PM. All times are assumed to be local, unless indicated as UTC (Coordinated Universal Time) or a specific time zone. We recommend a complete date and time follow the ISO Standard 8601 form.

EQUATIONS

Equations are indented 1 inch and numbered consecutively with a numeral in parentheses to the right of the equation [aligned flush to the right margin]. Prepare equations in the simplest form possible and define all variables, including their units. **Do not embed equations as images**, use the 'insert equation' function in Word; embedded equations will be rekeyed by production and this introduces the possibility of error. If the length of an equation is likely to exceed one column width (3 ½ inches), provide the equation on multiple lines, breaking it where the break will cause the least ambiguity.

$$E = mc^2 \tag{1}$$

where E is energy, m is mass, and c is the speed of light.

FIGURES

Figures are required to be submitted as separate files before final acceptance of the manuscript (submit multipanel figures {ex: 1a, 1b, etc.} as one file {ex: fig. 1}). Authors may embed figures in the manuscript text during the review process. When submitting separate figure files for initial review, include the figure numbers and captions within the file to aid the reviewers.

- Number figures consecutively and include a brief caption followed by an optional description so a reader can understand the figure without referring to the manuscript text.
- To assist those who may not be able to clearly see the figure, the title/description should explain the main point of the figure.
- Define any acronyms used in the figures in the first figure (or table) where it appears and then just the acronym may be used in any subsequent figures or tables.
- Submit only one version of each figure; color figures are the default for the journal.

Examples:

Figure 1. Photograph showing bank erosion with severe undercutting on Mud Creek.

Figure 2. Graph of costs showing how cost increases exponentially with size.

Figure 3. Map showing the location of U.S. Geological Survey (USGS) stream gauge stations.

A figure will appear in the text as soon as possible after it is first mentioned, unless a specific place is indicated by note:

[INSERT FIGURE 1 HERE]

Figures should clarify a point or document some condition, and should add to the text, not duplicate it. The concepts of Edward Tufte's "The Visual Display of Quantitative Information" (ISBN 0961392142, http://www.edwardtufte.com/tufte/books_vdqi) are highly recommended, particularly those of minimizing ink and avoiding "chartjunk."

The University of Oregon, Data Graphics Research Program has developed attractive color schemes (<http://geography.uoregon.edu/datagraphics/>) which show well in black-and-white printing and will be easily viewable by readers with impaired color vision. The common red-yellow-green "stoplight" pattern, for example, is almost incomprehensible when rendered in black-and-white.

Submit figures in one of the three preferred formats:

- Encapsulated PostScript (**EPS**)
- Portable Document Format (**PDF**)
- Tagged Image File Format (**TIFF**)

JPG files will not be accepted for publication.

We suggest line art be saved as EPS files. Alternately, these may be saved as PDF files at 600 dots per inch (dpi) or better at final size. Tone art, or photographic images, should be saved as TIFF files with a resolution of 300 dpi at final size. For combination figures, or artwork containing both photographs and labeling, we recommend saving figures as EPS files, or as PDF files with a resolution of 600 dpi or better at final size. More detailed information on the submission of electronic artwork can be found at

https://authorservices.wiley.com/asset/photos/electronic_artwork_guidelines.pdf.

IMPORTANT: To verify the image you are providing is of adequate resolution, perform a visual inspection by zooming-in to 300%, if the image becomes blurry or pixilated, adjust the resolution. When adjusting the resolution in Photoshop, Illustrator, *etc.*, the “resample image” box **MUST** be un-checked in the dialog box (figure editing programs automatically have the “resample image” box checked - it needs to be un-checked in order for the resolution to actually increase).

Figure File Naming Convention. For quality control purposes, it is best to include the following elements in the file names: paper number, submitting author’s last name, and figure number. Example: 18-0123_Smith_Fig1.eps

FOOTNOTES

Footnotes are not used; include all explanations within the text.

FORMAT

Manuscripts should be formatted as follows:

File Type = MS Word Paper size = 8.5x11 (letter) Columns = single

Font = Times New Roman Font size = 12 point

Line spacing = double

Margins = 1 inch for body, .5 inch for header/footer

Section numbers = do not number sections. See [Section Headings and Numbers](#) for heading styles.

KEYWORDS

At least four (4) keywords should be provided as an aid to information retrieval and selecting reviewers. Three or more of these must be selected from the JAWRA list of key terms (<http://www.awra.org/jawra/keyterms.html>). This list is available online during the submittal process in ScholarOne Manuscripts. In addition to selecting key terms in the online system, list the Keywords

on the manuscript directly following the Abstract. The preferred limit for keywords is 210 characters including spaces. Use semi-colons to separate the words.

Example: (**KEYWORDS:** flooding; precipitation; stormwater management; urban areas.)

LITERATURE CITED (FORMAL REFERENCES)

Proper citations are critical as a matter of professional courtesy and because search engines such as Google Scholar recognize them and infer linkages. Cite references to published literature by author(s) and date, as in the examples provided below.

- Do not use a numbering system.
- **Each entry in Literature Cited must have at least one corresponding reference in the text. If you delete or insert a text reference during revision, be sure to update the Literature Cited section as well.**

References to an unpublished work should not be listed under Literature Cited unless it has been fully approved for publication. Please see the "[Citations within Text](#)" section for a description of what qualifies for Literature Cited.

TIP!
 Correcting citations is, by far, the biggest source of questions in copyediting. The most common errors are: (1) Different dates or name spellings between the text and the Literature Cited section; and (2) Citations missing volume, number, pages, etc.

The basic form for names is: First author = Surname followed by initials. Each subsequent author = Initials followed by surname.

Publications by the same author(s) shall be ordered oldest to newest.

Book	Fritts, H. C. 1976. <i>Tree Rings and Climate</i> . London: Academic Press.
Book chapter, or paper in a Proceedings	Rickert, D. A., W. G. Hines, and S.W. McKenzie. 1975. "Implications of Dissolved Oxygen in the Willamette River, Oregon." In: <i>Urbanization and Water Quality Control</i> , edited by William Whipple, Jr., 70-84. Middleburg, VA: American Water Resources Association.
Databases Databases may be included in the Literature Cited if they are fully citable and are to include a DOI. Provide access dates in the text citation.	Moschetti, M.P., 2017. Database of earthquake ground motions from 3-D simulations on the Salt Lake City of the Wasatch fault zone, Utah: U.S. Geological Survey data release, https://doi.org/10.5066/F7V98691 . (available online: https://www.sciencebase.gov/catalog/item/58beff98e4b014cc3a3a9b84 ; access date 02/28/2018)
Journal article Pay particular attention to how a journal prefers to abbreviate its name, and how it identifies a particular article. Always include the digital	Robbins, J. L. and L.Y. Lewis. 2008. "Demolish It and They will Come: Estimating the Economic Impacts of Restoring a Recreational Fishery." <i>Journal of the American Water Resources Association (JAWRA)</i> 44 (6): 1488-1499. https://doi.org/10.1111/j/1752-1688.2008.00253.x

object identifier (DOI) unless one is not available.	
Thesis or Dissertation	Cosgrove, D. M. 2001. "Response Functions for the Conjunctive Management of Water in the Eastern Snake River Plain, Idaho." PhD diss., University of Idaho.
USGS Report Each USGS report is uniquely identified by its series and number. Many USGS reports are stored online in the USGS Publications Warehouse (http://pubs.er.usgs.gov/), and should be cited with the URL found in the Publications Warehouse. Note USGS databases are treated as informal references .	Lanfear, K. J. 2005. "A Near-optimum Procedure for Selecting Stations in a Streamgaging Network." U.S. Geological Survey Scientific Investigations Report 2005-5001. http://pubs.er.usgs.gov/usgspubs/sir/sir20055001
Online Report Please use the most persistent URL available.	CalFed Bay-Delta Program. 1999. CalFed Bay-Delta Program Ecosystem Restoration Plan, Strategic Plan for Ecosystem Restoration. http://www.calfed.water.ca.gov/ecosystem_rest.htm
Web Pages & Websites These may be included in the Literature Cited if they are fully citable. Provide access dates in the text citation.	Multi-Resolution Land Characteristics Consortium. 2015. "National Land Cover Database 2011 (NCLD 2011)." http://www.mrlc.gov/nlcd2011.php
Wikipedia	(We do not consider Wikipedia to be an authoritative source to be included in Literature Cited. Avoid citing Wikipedia and other online encyclopedias; instead find and cite original sources of the information. If Wikipedia is cited, treat it as an Informal Reference .)

PRODUCT NAMES

When providing product names, include manufacturer details: company name, city, state, country; the state name should be spelled out. Include any disclaimers in the Acknowledgements section. An example of an appropriate disclaimer is: "Any use of trade, firm, or product names is for descriptive purposes only and does not imply endorsement by the U.S. Government."

RESEARCH IMPACT STATEMENT

The purpose of the Research Impact Statement (RIS) is to highlight one major insight or finding of broad interest to researchers, policy makers, practitioners, and the general public and should emphasize the paper's practical or policy significance. This information may be used to promote the paper on social media sites (e.g. Twitter, LinkedIn) and therefore, to the extent possible, should be jargon free.

The RIS is a **required** section and should appear on the title page of the manuscript after the author information and before the abstract. The RIS is **limited to 200 characters** including spaces and punctuation.

Example: **Research Impact Statement:** Standard Precipitation Index (SPI) is useful to initiate but not remove groundwater drought restrictions as the effects set in late but tend to persist longer in aquifers.

REFERENCES

(See [Literature Cited](#) or [Citations within Text](#))

SECTION HEADINGS AND NUMBERS

Sections are not numbered.

Section headings are formatted as follows; except for Level I, all headings are headline style (initial caps except for articles and prepositions; see examples below):

LEVEL I = all caps, centered

LEVEL II = left justified, italicized

LEVEL III = indented, bold, punctuated by a period, text follows on same line

LEVEL IV = indented, underlined, punctuated by a period, text follows on same line

LEVEL V = indented, italicized, punctuated by a period, text follows on same line

LEVEL I

Level II Section Head

Text under level II follows on next line.

Level III Is a Section Head. Text follows on the same line.

Level IV Falls between Three and Five. Text follows on the same line.

Level V Really Parses Out the Text. Text follows on the same line.

When including optional end sections, use the following order between the Conclusions and Literature Cited:

Appendices

Supporting Information

Data Availability

Acknowledgements

SUBMITTING A MANUSCRIPT

All submissions are processed through **ScholarOne Manuscripts** (<https://mc.manuscriptcentral.com/jawra>). Please note ScholarOne Manuscripts has a total file size limit of 100 Mb for manuscript submissions. Authors may consider using a lossless compression such as LZW to reduce the size of TIFF images if the total 100 MB limit is exceeded.

SUPPORTING INFORMATION (SUPPLEMENTAL MATERIAL)

If there is supplemental material that will be available online but not within the article itself, include a *Supporting Information* section directly before the Acknowledgments and Literature Cited and after any Appendices. The text of the section starts with the one sentence provided below. The descriptive text inserted after the colon should be kept very short.

“Additional supporting information may be found online under the Supporting Information tab for this article: <Descriptive text: provide a very brief description of the supplemental material>.”

Notes:

1. The lead in text preceding and including the colon is not to be altered; the descriptive text follows the colon and the first word is capitalized.
2. The descriptive text should be as brief as possible and does not need to include a list of all items; just a general summary of what can be found online.
3. When you upload the file[s], choose "Supporting Information for review and online publication only" as the File Designation.
4. The supporting information material is not copyedited or typeset: combine the files into one formatted and edited file for ease of use by readers, use multiple files if a single file is not feasible or ideal; PDF format is often recommended.

Example:

“Additional supporting information may be found online under the Supporting Information tab for this article: A table with available monthly water quality and habitat parameters.”

Visit <https://authorservices.wiley.com/author-resources/Journal-Authors/Prepare/supporting-information.html> to access the Wiley guidelines for the submission of Supporting Information.

TABLES

Tables may either be included at the end of the manuscript file or uploaded as separate Excel files before final acceptance of the manuscript. Authors may embed tables within the manuscript text during the review process. When submitting separate table files for initial review, include the table numbers and titles within the file to aid the reviewers.

- Tables should be used to replace text, not duplicate it.
- Number tables consecutively and include a brief descriptive title; the title may be followed by up to several lines of explanation.

- The title and explanation should describe the table so a reader can understand it without referring to the manuscript text.
- Use a minimal amount of horizontal or vertical lines to separate rows and columns.
- Define any acronyms used in the tables in the first table (or figure) where it appears and then just the acronym may be used in any subsequent tables or figures.

A table will appear in the text as soon as possible after it is first mentioned unless a specific place is indicated by note:

[INSERT TABLE 2 HERE]

When submitting a table in its final form for publication, it **must be editable** [*i.e.* either as a Word table or an Excel file]; embedded images are not acceptable.

TEXT

Text should be written so it will be of interest to readers in the wide variety of disciplines represented by JAWRA's readership. The manuscript may be written in the first or third person. Excessive use of bulleted or numbered text is discouraged. There is no word limit for the text except for Technical Notes and Water Commentary and Reviews; see the relevant sections above. Rare is the manuscript that cannot be shortened!

Field codes should not be used as these often do not convert properly and can be corrupted.

If assistance is needed with English translation, our publisher, Wiley, provides various services to help prepare manuscripts for submission at <http://wileyeditingservices.com/en/>. Authors must make their own arrangements to use any service and are responsible for all costs. Authors are not required to use these services and are at liberty to find other providers.

TITLE

Titles are limited to 130 characters including spaces and should succinctly reflect the contents of the article. Avoid the use of acronyms; common acronyms such as SWAT or GIS are allowed and other exceptions are made on a case-by-case basis, usually for model names. Submit titles written in *headline style* (initial caps except for articles [*e.g.* "a", "an", "of"] and prepositions [*e.g.* "between", "from", "with"]).

Example:

Designing and Implementing a Network for Sensing Water Quality and Hydrology across Mountain
to Urban Transitions

TITLE PAGE

The first page of the manuscript is the title page and includes the following elements in the order listed: Title, Author List, Author Information, Abstract, and Key Terms. Format these elements to

limit the length to one page; 1.5 line spacing may be used on the title page; the Title and Abstract have character limits as detailed in their descriptions.

Title of the Paper

Amy Orator, Penelope Penn, and Dale E. Writer

Department of Hydrology (Orator, Penn), University of State, Anywhere, Alaska, USA; and Northeast Science Center (Writer), U.S. Geological Survey, Northern Town, Maine, USA (Correspondence to Orator: name@institution.extension).

Research Impact Statement: Standard Precipitation Index useful to initiate but not remove groundwater drought restrictions as the effects set in late but tend to persist longer in aquifers.

ABSTRACT: The body of the abstract follows the section label as inline text and is limited to 1,500 characters including spaces. This works out to 1,490 characters once "Abstract: " is taken into account.

(**KEYWORDS:** term 1; term 2; term 3; term 4; term 5.)

UNITS

System International (SI) units are required as defined by the National Institute of Standards and Technology (<http://physics.nist.gov/cuu/Units/introduction.html>). Other units may be used only when they derive from source materials and the SI equivalent should be given in parentheses, as in, "The ordinance allowed the diversion of 1,000 acre-ft (1.23 Mm³) of water." Standard SI symbols are required (e.g., do not use abbreviations such as "cms" instead of "m³/s"). In rare cases, the editor-in-chief will authorize use of non-standard units for policy subjects to make them more understandable to their main audience.

Preferred units are as follows:

Large volumes of water	m ³ prefixed as needed by million (Mm ³) or billion (Gm ³). There is no direct SI equivalent for acre-feet, such as hectare-centimeters; rather, one should use m ³ .
Precipitation, evaporation, evapotranspiration, and runoff	mm
Streamflow	m ³ /s or L/s

WORD CONVENTIONS

The following are two words when used as a noun, and hyphenated when used as an adjective:

bed load	field work	ground watershed	time scale
decision maker	flow rate	policy maker	water body

The following are treated as one word:

bankfull	flowpath	nonpoint	streambank
baseflow	freshwater	overpredict	streamflow
database	groundwater	snowmelt	underpredict
dataset	hillslope	stormflow	wastewater
floodplain	instream	stormwater	