American Fisheries Society
Student and Early Career Professional Subsection of the Education Section

How To Write A Peer Review

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14 verified reviews of articles in fisheries and ecology journals

Overview

The peer review process is extremely important in the fisheries field (and in all science disciplines) because it ensures research being published is legitimate and of high quality. Your first experience of the process likely will be when you submit an article for publication in a journal and you receive reviews critiquing your work. From the author's side of things, it can often seem like reviews of your work take a long time to complete and are of widely-varying quality. As you progress in your studies and career, you may want to become involved in the process as a reviewer. This is an excellent goal because you will be contributing to the system that ensures quality research is being produced, and you can list your reviews on your C.V. or a review-tracking website to get credit for your work and increase your hirability. The following information is intended to help prospective reviewers solicit reviews, evaluate requests, and provide meaningful reviews that will encourage journal editors to continue to select you as a reviewer.

Soliciting peer reviews

If you have yet to be invited to review an article and you would like to review, there are a number of steps you can take to solicit reviews. The most effective method is to let a mentor (e.g., advisor or professor) know that you are interested in reviewing. If they receive a request to review an article and do not have the time or interest to do so, they may defer and provide your name as a substitute reviewer. Another effective method to solicit reviews is to register on the Publons website (or equivalent peer review sites) and list your areas of expertise and indicate your availability to review. Additionally, when registering for online author accounts (e.g., ScholarOne) when submitting articles for publication, you can indicate to the editors of a particular journal that you are available to review, and you are usually able to select your areas of expertise so the editors can target you with review requests. Finally, publishing research usually equals more review requests because journal editors often select reviewers based on literature cited in prospective articles. If you have more published articles you will likely be cited more and have a better chance of receiving a review request.

Evaluating a peer review request

If you have received a peer review request, the first steps are to verify the request is legitimate, check to see that the article is within your area of expertise, and assess whether you will be able to provide a review within the timeline expected by the journal. First, it is important to make sure the request is legitimate and worth your time. In recent years, there has been an increase in journal-related spam requests and emails. It is common to receive requests for articles, contributions, or editorial assistance from journals or organizations that are not reputable and are often "pay-for-play" operations. Often these disreputable requests will contain wording with poor grammar, will be international in nature, and will mention fees. If something seems a bit fishy, search for the journal's impact factor, "about" information, guidelines for authors (particularly the page charges info), and take a look at the editorial board. It's also worth looking at recent articles published in the journal on Google Scholar to see if they are well-cited and legitimate. If you have verified that the request is legitimate, read the abstract for the article (typically included in a review request). You should be able to quickly tell whether you have the necessary experience/skillset to properly review the article by reading the abstract. If there are a few aspects of the research that you are unfamiliar with that is OK, as long as there are aspects that you feel you have strong knowledge of. Finally, consider the deadline the journal gives you to provide a review. This can vary from a couple weeks to more than a month. Will you have the time and ability to provide a review by the date requested? If you believe you will have at least 8 hours to dedicate to the review, that will likely be sufficient (unless secondary data analysis or in-depth statistical review is warranted).

Peer review steps

1. Download the article text, supplemental files, cover letter, and any other relevant documents. Save them or print them out. Set aside time for a first read of the article and associated material. Instead of immediately diving in with a red pen, read over the article to get a broad overview of the approach, objectives, hypotheses, findings, and implications of the study. Take notes on a separate piece of paper about any obvious shortcomings of the research or any overall impressions. This is about getting a feel for the article. If during the initial reading you notice **substantial** problems such as incomprehensible language (sometimes seen from authors that have a different primary language than the one specified for the journal) or glaring issues with the research design, consider pointing these shortcomings out and concluding your review here. List these problems in your review and don't take a deep dive so you don't waste your time.

2. Next, take a look at the aims and scope of the journal. Does the article tick all the boxes required by the journal based on your first reading? Oftentimes journals mandate that research be of international interest, within specific fields of study, or contribute to the advancement of science. If you think the article does not

check the boxes, formulate comments to this effect and this can preclude you from having to review the article in more detail, unless you want to fully review it regardless. Authors usually will appreciate any and all constructive comments you are willing to give, even if you think the article overall is not worthy of publication in the journal specified. You can also suggest an alternative journal the authors could submit their article to if you know of one whose scope the article would align with.

3. Set aside time to do a second reading of the article. At this point, get out your red pen/digital comments and make notations line by line. Grammar corrections, sentence structure suggestions, and other smaller nitpicky problems are helpful to address but are less important than identifying larger-scale issues such as inconsistency with terminology, incorrect or lacking references, inappropriate statistical analyses, problems with calculations, or a faulty research approach.

4. Check the references cited to verify that they support the assertions in the article. If any methods, analyses, or findings are unclear, request clarification in your comments. Make sure the methods are reproducible, objectives clear, hypotheses outlined, and the "why" (implications) of the results are discussed. Point out studies that refute or support assertions from the article that weren't included in the references cited. Check to make sure that assertions made are reasonable given the nature of the data collected, sample sizes, and statistical power of analyses. Verify that ethical animal collection, handling, and euthanasia procedures were approved by appropriate authorities. Evaluate the necessity and clarity of tables and figures, the representativeness and completeness of the data presented is very important. Consult with colleagues or experts regarding anything you might need clarity on, remembering to respect the privacy of the article authors. Make notations on the paper copy or digital version of your comments/concerns.

5. Conduct a third reading of the article and identify any issues/comments you may have missed. It is most useful to read aloud rather than in your head to best-identify issues.

6. Collate your comments in a word document. Call out your comments to the line numbers of the relevant article text (e.g., "L35—Incorrect terminology used"). It is best to separate your comments into "primary" and "specific" sections (however, some journals want reviews separating minor and major revisions). Primary comments are listed first and address major problems or suggestions that do not need to be linked to specific line numbers (e.g., "The authors did not use the best available statistical models"). Specific comments should go in-depth and be linked to line numbers (e.g., "L154—Please include the overall sample size evaluated as it is not explicitly stated"). Preface your comments with a general

paragraph that lists the title of the article, the names of the authors, and a summary of the article approach and findings. Follow this paragraph with your primary and specific comments.

7. Consider signing your name to your review. If you are very supportive of the article and want your identity to be known to the authors, sign your name to the review after the initial paragraph and before the primary and specific comments. Most reviewers do not sign their names, but if they are particularly impressed with the article, want to assert they are experts in a field, or are interested in the authors contacting them at a later date for possible collaboration they may sign their name. If you sign your name to the review you may be thanked in the 'Acknowledgements' section of the article if it is published.

8. Complete your review. Upload/send the document with your summary and comments to the journal contact/reviewer interface. Or copy and paste your comments into a form if this is preferred in the journal reviewer interface. Typically, you will also need to rate the article in certain categories (e.g., appeal to global audience), and indicate whether you recommend that the journal accept or reject the article. Additionally, there is usually a space for confidential comments to the editors (e.g., "if the authors correct __ I will support publication of the article"). You will usually be asked to indicate whether you would be willing to review a revision of the article.

Recognition for your review

Because reviewing of articles is traditionally a confidential process, it can be difficult to get credit for your reviews. However, new websites such as Publons allow you to get credit without compromising the privacy of the manuscript authors. You can forward the email confirmation of your review to websites like Publons and they will display the name of the journal you reviewed for and the date of the review within a portfolio of the reviews you have conducted. For purposes of your C.V., it is best to include reviews in their own section as follows:

"Journal article reviewer, *Freshwater Biology*, January 2020."

If you review revisions of an article or multiple articles for the same journal within a year, you could list these as follows, respectively:

"Journal article reviewer, *Freshwater Biology*, January and March 2010"

"Journal articles reviewer, *Freshwater Biology*, January and September 2020"

Example/template review

Review of “[article title]” (authored by __).

This manuscript reports the outcomes of a study combining both laboratory experiments and field observation aimed to assess optimal holding velocity, drift feeding strategy, and dominance among ___. Another purpose of the ms was to vet the suitability of a previously-tested __ model for this species.

Overall, I really like the methodology of the study—the analysis is really impressive. Additionally, I am very excited that the authors have chosen __ to investigate, as the species is cryptic and has barely even been mentioned previously in peer-reviewed publications. Adding links to YouTube videos of the __ was a nice touch as well.

However, I have highlighted some major points for improvement that the authors should incorporate to increase the quality of the manuscript. Please feel free to contact me if any are unclear.

Kevin Fraley, University of Canterbury (11th July 2018).

Primary comments.

1. I take slight issue with the assertion that __. The authors should include an expanded discussion about why the model may have been unsuccessful. Given similar findings __, I think it is clear that the model may not fit in this case. I have included specific suggestions for improvements in this regard within the Minor Comments below.

2. I think the authors should highlight the uniqueness of __. I have included some suggestions for this in the Minor Comments below.

3. There is excessive self-citation in the first three paragraphs of the introduction. I would recommend that you try to limit the self-citation of individual articles to 1 instance per paragraph, unless the study is the only ref available for the point you are making.

Minor comments

L1. Title could be improved. I suggest “__”

[Etc.]