

Guide to reviewing papers  
By Isla Myers-Smith, Ally Phillimore and Anne Bjorkman

**What you need to do:**

You will need to read the manuscript a couple of times through – thoroughly. You will need to make a list of minor changes that need to be made. Finally, I put together a numbered list of the major changes that need to be made to the manuscript for it to be acceptable for publication.

**How clear you need to be in your assessment of the paper:**

If the paper is great and should be accepted say so and don't leave room for doubt on the part of the editor. The absence of praise at most ecological journals now can lead to rejection, so if you say nothing nice or only something like "this is an interesting manuscript", that is damning with faint praise and the paper will likely get the "not cool enough rejection" or worse!

If the paper is not good, then it is appropriate to be faint with your praise, but never be mean. Never say you don't think it is worth publishing, remember this could be the first paper of a PhD student out there, so try to be as constructive as possible.

Your assessment of this paper, particularly if you are one of two reviewers, will make the difference potentially between the paper getting accepted or not. In general, try to be constructive to improve the paper with the journal in mind or after major revisions for another journal. You are doing your bit for the scientific community – so try to do your best and hopefully the authors will appreciate it!

**The question of novelty:**

One of the trickiest things to assess is whether the manuscript is appropriate for a given journal in terms of novelty. You may be asked to assess this in your review. What is "novelty" is an ongoing discussion that I have with colleagues and to which there is no easy answer. It has something to do with the study being new (never done before), filling an important knowledge gap, being on a sexy topic, being big picture or large scale or involving a new and exciting technique or approach. It is a good idea to check out other papers in the journal, if you are asked to assess this, and see how the manuscript ranks comparatively. Some journals will specify their criteria such as I guess Journal of Ecology only wants multi-site studies. Ecology Letters only cares about novel new findings and often wants multi-site synthetic work, but not always. Usually lower tier journals like Botany/Polar Biology/etc., don't care so much about novelty and are more focused on whether the science is solid.

<https://dynamicecology.wordpress.com/2016/02/08/where-do-ideas-come-from-and-what-counts-as-novel/>

**How long to spend:**

I spend at least 3 – 4 hours on each review, sometimes far longer. You can go to your supervisors or mentors for help if you are unsure about something, but remember to maintain the anonymity of the authors. If you really need significant help with a review, you can ask the editor to share the reviewing responsibilities with someone so that you can share the entire manuscript with them.

Note: The deadlines are guidelines, but it is very nice for the managing editors if you can stick to those deadlines so that they don't have to chase you up too much!

**The comments to the editor box:**

If you feel like there are things you need to say directly to the editor and not to the authors, there will be a box for this. If you don't have the relevant expertise to review an element of the manuscript (e.g., the statistical approach), you can use this space to tell the editor, so that they should rely on another reviewer to assess that part of the study.

Note: Some people say that before a manuscript is published it is a manuscript and afterwards it gets to be called a paper. I sometimes use the words interchangeably.

My reviews look something like this:

Date

Title of the paper

Start with a paragraph explaining what the paper is about – the big key messages:

- Be nice here and demonstrate your understanding. This is a part of your compliment sandwich. This is helpful for editors who haven't really read the paper properly and it demonstrates that you did actually understand the paper or that you didn't if you didn't.
- You also want to say in this paragraph what you actually think about the paper. This can be super enthusiastic if it is a great paper that you want to see published or kind of muted if you don't think it is great.

Next go into a general yet itemized list of what needs to be revised about the manuscript for it to be acceptable for publication. For example:

In order for this paper to be acceptable for publication in the Journal of Irreproducible Results the following revisions are required:

1. The statistical models need to incorporate the hierarchy of the dataset. Linear mixed models or a similar approach with random effects for region and year would be an appropriate statistical analysis.
2. Some key papers are missing in the introduction and discussion sections to the following studies.

Grim, Tomáš. "A possible role of social activity to explain differences in publication output among ecologists." *Oikos* 117.4 (2008): 484-487.

<http://onlinelibrary.wiley.com/doi/10.1111/j.0030-1299.2008.16551.x/abstract>

McNOLEG, O. L. E. G. "The integration of GIS, remote sensing, expert systems and adaptive co-kriging for environmental habitat modeling of the highland haggis using object-oriented, fuzzy-logic and neural-network techniques." *Computers & Geosciences* 22.5 (1996): 585-588.

<http://www.sciencedirect.com/science/article/pii/009830049500131X>

3. The paragraphs in many sections are overly long and do not conform to modern standards for scientific writing with clear topic sentences and concluding sentences that link to the next paragraph.
4. The writing needs to be grammatically corrected, often commas were missing and sentences were overly long (see detailed comments below).

You might also want to point out some non-essential suggested changes after this itemized list. For example:

In addition, this paper could benefit from inclusion of additional figures and tables in the supplementary materials of some of the results discussed (see below). For more details on appropriate statistical analyses for this sort of data set see the following paper:

Lim, Megan SC, Margaret E. Hellard, and Campbell K. Aitken. "The case of the disappearing teaspoons: longitudinal cohort study of the displacement of teaspoons in an Australian research institute." *BMJ* 331.7531 (2005): 1498-1500.

<http://www.bmj.com/content/331/7531/1498>

Then include a list of detailed comments on the manuscript. For example:

## Detailed comments

### Abstract

Line 27 This sentence should include the major take-home message of your study.

### Introduction

Line 56 – 59 Refer to this additional study here see:

Reynolds, Robert C. "The Geomorphology of Middle-Earth." *Swansea Geographer* 12.1 (1974): 974.

Line 68 – 73 This paragraph should refer to the aims of the study and should include a list of hypotheses that are tested in the manuscript.

### Methods

Line 115 It is not clear how many regions you collected data from nor what "population-level" characteristics were measured. A map and table in the supplementary materials could help to make the methods clearer.

...

### Results

Line 211 - 258 Do not just report p-values here. When presenting statistical results include the test, sample size, effect size and error, test statistic and p-value if relevant.

...

### Discussion

Line 310 Start your discussion off with a summary of your major findings in the order they were presented in the methods section.

Line 366 I am interested in your statement "we found strong evidence for a relationship between productivity and beer consumption", I think that you will find that if the hierarchical nature of the data is taken into account, the error around this slope will be higher and the significance of the statistical test will be lower.

....

### Figures and Tables

Figure 1. I am not sure I understand what the different colours of points indicate in this figure, also can you state what sort of error is represented by the error bars.

Figure 2. Indicate the sample sizes for each of these groups in the figure caption or in the figure.

...