Facets-2020-0021

July 3, 2020

**Ten simple rules to facilitate evidence implementation in the environmental sciences.**

Dear Dr Stephen Heard,

Thank you for the opportunity to revise this contribution anew. Short editorials and idea papers are tough! I appreciate your guidance in the revisions.

There were two major revisions remaining (and several minor ones).   
  
Firstly, tidy up flow and writing in the Introduction. We are much more direct, and ALL jargon is cut from the Introduction (and Implications section too).  
  
Secondly, differentiate rules 8 and 9 from current practice in the discipline. We have addressed both these major revisions (and the minor ones too). The conversation through peer review and your feedback really pushed us to think harder what we meant by those two rules! Superb process.

Thank you again, and I hope we made it!

Best,

Christopher.

**List of revisions**

**Editor Comments to Author:**

I agree completely with Reviewer 1: this manuscript is enormously improved, and yet still could use some further revision if it's to have maximum impact. Although I guess I'm not adding new points to the review, I'd stress in particular two things:

> Thanks, we appreciate the guidance and focussed direction.

1. The Intro and the Implications section could use more work to make the writing simpler and more direct. There is redundancy, and there's still a lot of jargon. Consider, for example, this sentence: "These rules are not a surrogate for scientific co-production with stakeholders, but a heuristic that can enable adaptive management for the environmental sciences from studies that are not necessarily directly coupled to pressing issues." What, if anything, does this mean? What's a stakeholder? What's co-production? Do we really need the word "heuristic"? My best guess at what this sentence might mean is "These rules won't replace scientists working directly with environmental managers, but they will help managers take advantage of literature that was produced without their involvement". But I could be wrong about this - and that's something you, as authors, ought to be concerned about. Please understand: fixing this sentence will not resolve the issue. It's just an example.

> Yes, you were absolutely correct. That is exactly what we meant!! Revised Introduction and Implications.

2. Rules 8 and 9 still puzzle me (as they do the reviewer). It's not that either of us disagrees; it's just that we have trouble imagining a paper that doesn't identify its methods (8) and apply those methods to its central question (9). Since it's unlikely that you really want to shout from the rooftops about trivial rules, I think I'm missing what it is that you are suggesting as an improvement over current practice. Perhaps you can give an example of how papers in the literature are NOT in compliance with what you intend these rules to mean - that might help me understand what I'm missing about the rules.

> I agree. Simple rules are not meant to be prescriptive but a suggested set of considerations. These two rules fall firmly in that category and function more as strong reminders to the authors to make tools and outcomes as transparent as possible. This seems really obvious, but in doing some synthesis work including meta-analyses, sometimes it is not crystal clear what the authors do or honestly sometimes why. We did our best here to advance these ideas now in a positive tone.

**Reviewer: 1**

1. A much improved manuscript that will helpful for researchers that are striving to improve science communications and enhance accessibility and use of their science.

> Thanks.

2. There are still some big redundancies and edits and the paper would greatly benefit by addressing these. Text in lines 69-126, and 308-353 need to be edited and tightened. For example lines 316 and 344 both include discussion on stakeholder engagement. Major comments and edits follow:

> Revised. Dr Heard also highlight these points, and we used that guidance to revise.

A table or list of the rules would be helpful.

> Given this is a short editorial, we have elected to not provide a table.

**Minor suggestions**

17: suggest starting the abstract here " There is an implementation gap between..", and then delete the next two sentences.

> Certainly, started Abstract where you proposed.

38: Would start the paper here "The scientific literature is an important tool that we use to describe, measure and manage natural systems”

44: just use "Environmental managers" throughout the paper

> Super, there were two instances that were redundant.

46: delete "but also among many scientific sub-disciplines (Haines 2004)." - true, but I don't think the paper is about fostering transdisciplinarity?

> Agreed. No hat tipping needed. Thanks. This sentence was replaced by a suggestion for Dr Heard.

60: "Evidence-based solution science and policy decision making are the gold

standard in all disciplines—including the environmental sciences" - why, reference? Maybe frame that we are currently in an environmental crises, and scientists need to provide decision-makers with direction.

> Excellent. We used the provide direction suggestion. Thank you.

81: "science" communication is in a state of crisis

> Cut altogether.

95: this section would benefit from being broken into several paragraphs

> In the spirit of a more direct introduction, we cut the jargon and simplified to reduce this paragraph.

134: Suggest that it's so that env managers can easily translate research to inform evidence based action and policy

> Great. Revised.

158: the example in Rule 1 is very helpful. Could an example also be provided here

> Thanks, we had revised this rule for clarity.

176: seems like this might be 2 rules: explicitly linking science and implementation, and stating limitations and caveats. Suggest moving the discussion on limitations to Rule 6.

> Good idea, we did not mean for this rule to be about limitations so have revised.

It might also be worth adding that the selection of journal and the type of submission can impact the latitude of the authors to discussion implementation Perhaps in the intro.

> I like this idea and agree but was unable to find a way to add in.

203: it might be helpful to refer to "boundary objects" - i.e. identifying human needs can be a way to engage a broader audience in understanding the importance of the results and policy implications.

> We did no want to invoke that concept but did more clearly state that for better or worse human needs should almost always be on the table in the environmental sciences.

233: "conservationists" or "env managers"?, see comment above about keeping this consistent

> Revised

246: instead of saying there are many great examples, could an example be provided?

> Simplified description to be more direct.

264: seems like this would be part of the methods in any paper. Perhaps this is more about providing guidance on how local nuances could be determined that would support implementation of the research results using more simplified approaches?

> Yes, great point. We meant two things here really. Transparency - sometimes hard to tell what people did and secondly yes how do you turn methods in a paper into practical implementation.

280: this also seems like something every paper/ research report would already do. How could my tool/methods not be linked to the outcome? Choosing an appropriate methodology seems like a rule to conduct basic science vs a rule to bridge science and implementation.

The example may actually be a better rule of having a clear title for your paper that potential users can easily understand.

> Agreed. We have revised this rule to be very direct. Sorry it was not clear.

299: explanation seems short compared to the others. It does seem like this would be part of the discussion of a paper. Not sure if this is about applying the "tool" or discussing how the results/ findings could have other applications.

> We like it. Try at least once. It is a bit Yoda, do or do not. And, we say do!

307: "Implications" or discussion?

> We like implications.

308: describing science communications as a "burden" seems to be breaking rule #1 of framing opportunity :)

> I know, haha, cut!!

314: when would I use them?, when should they not be used?

> Clarified.

349: I don't understand the reference to connecting people and nature (in the intro as well) as it related to the purpose of the paper.

> Cut. Dr Heard suggested the same too - be direct. This is not a paper directly discussing how to connect people and nature but a paper about science papers and implementation. Thanks!