

Interactive comment on “Using R in hydrology: a review of recent developments and future directions” by Louise J. Slater et al.

Anonymous Referee #1

Received and published: 3 March 2019

This manuscript represents a substantial contribution to scientific progress in hydrology in that it makes readers aware of the new task view in R for Hydrological Data and Modeling. Because there are almost 14,000 packages available in R and countless more in other repositories, it is difficult for analysts to keep up on packages potentially useful to them. Having a hydrology Task View is an important maturation in the use of R in the hydrology community, that many might not be aware of for quite some time without some targeted messaging to the hydrology community.

The discussion of many packages available to hydrologists is good. While the authors cannot discuss them all, they have a fitting selection of useful packages. For example, an analyst may be aware of the trend analysis functions in R in multiple packages, but not the spatial analysis/GIS functionality, and this article helps bring together diverse

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analysis methods in one discussion of the hydrology community.

The mention of the traceability of package authors through their ORCID IDs is another important, relatively recent addition to R. As an active member of the R community, I was unaware of this and found that many packages do not use this yet. However, this is another way to judge the background of package developers and find related articles – excellent information to provide to the R-Hydro community.

The scientific quality of this article is excellent, providing a brief history of software languages used in hydrology and a brief history of R, while making good arguments for the use of R in hydrology. Reproducible research benefits all scientific work and is an area with continued need for improvement in hydrology – R can help.

The figures and graphics are appropriate for the article and are informative. The paper is well written and carefully edited prior to review (much appreciated by reviewers).

The scientific resources listed were good. It could have even been better if some of the authors were from the US and able to describe additional developments, providing a more global view.

A suggested improvement to the article is the inclusion of the useR! Conference, <https://www.r-project.org/conferences/> in the discussion of scientific resources and courses. These annual conferences are not specific to hydrology and earth sciences, but usually have some environmental science or ecology sessions as well as sessions or short courses of general interest on learning R, best practices, spatial analysis, and statistical methodology incorporated in various R packages.

Another suggested improvement is more discussion on setting up repositories. What are a few good options for hydrologists? Many subscribe to the workflow provided, but are still somewhat mystified by the repository step, that is actually rather easy once someone clears the initial hurdles of selection and setup.

On page 14, lines 8 and 9, the “(Mann-)Kendall testing” punctuation is a bit awkward,

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exacerbated by the line break in it. I suggest leaving it as Mann-Kendall testing because readers will know what that is referring to whether they know it as Kendall or Mann-Kendall.

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., <https://doi.org/10.5194/hess-2019-50>, 2019.