*Science* editors,

Please find the enclosed manuscript ‘Ephemeral stream water contributions to United States drainage networks’, in which we present the first continental-scale assessment of ephemeral stream hydrology and biogeochemistry for over 20,000,000 rivers, lakes, reservoirs, canals, and ditches in the contiguous United States (U.S.). This is the first regional assessment of the contribution of these important ecosystems to overall water flow.  Our major scientific findings are the following: ephemeral streams are responsible for, on average across United States drainage basins, 60% of exported streamflow, 82% of headwater streamflow, and 63% of drainage network extent.

These findings will be of interest to a wide range of scientists, and we believe the study has even broader implications for water policy. Ephemeral streams are not always included in water quality regulation rules, and this topic is of particular contention in the United States. While there is general agreement that the U.S. Clean Water Act (CWA) regulates large navigable waterways, differing and conflicting interpretations apply to smaller, tributary waterways and especially ephemeral streams and wetlands. For example, Sackett v. Environmental Protection Agency, a case currently in front of the United States Supreme Court, will soon revisit which waterways are subject to CWA regulation. Our results will be helpful in establishing U.S. federal jurisdiction for ephemeral streams by providing their first scientific assessment across the entire contiguous United States. For these reasons if our manuscript is sent to review, we request it receive an expedited review process to rapidly assess for publication.

The authors of this study all approve of this submission, and there are no conflicts of interest. None of the material in this manuscript is under review or published elsewhere. We provide the data and code underlying our analysis in a private repository and, if accepted, will make this repository public. Thank you for your consideration of this article (and of an expedited review process). If there are any questions regarding our methods, findings, or the broader implications of this work, please do not hesitate to contact corresponding author Craig Brinkerhoff.

On behalf of all authors,

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