

The study authors have done substantial editorial work to make the text clearer and improve the organization, but they basically ignored many of the substantive comments and suggestions from the first review. I have reviewed literally hundreds of journal articles and grant proposals, and I don't know if I recall any authors ever ignoring substantive comments to this extent. It is thus hard to be motivated to provide additional substantive review of the revised proposal. This is a difficult position for a reviewer to be in, and I don't think I have ever written a summary review paragraph like this.

I still think this can be a useful and informative study, but the proposal still has serious flaws.

Here are my main suggestions/comments on the revised proposal.

1. The proposal focuses on measuring "stream shade" although it doesn't define what is meant by stream shade. The importance of the definition was stressed in the previous review, but the authors simply removed any definition. Previously, they had provided two differing definitions, and rather than resolve the differences, they apparently elected to ignore any distinctions among the various stream shade definitions in the literature. This point is important because it affects the validity of the methods and the inference. It's hard to review a proposal when it isn't clear what is the fundamental unit the proposal seeks to evaluate.

I infer that what they mean by stream shade is "canopy cover assuming an east-west stream azimuth". If that is what they mean, they should say it up front.

On page 33, the following de facto definition is provided (note, terminology has changed from "stream shade" to "effective shade"): "Following thresholding procedures, effective shade (%) will be calculated using the formula $(1-GSF) \times 100$, where GSF (Global Site Factor) is the number of "open" pixels where the sun path crosses the sky during the period from 1 June to 1 September for solar altitudes 40° or greater (Roon et al. 2021)."

Essentially, this is a summertime-integrated percent canopy cover. It is the same thing that is measured instantaneously with a canopy densiometer, but a lot more complicated. On the next page, the de facto definition of shade is constrained to specific azimuth assumptions as follows:

"Using the Hemisfer photo analysis software, hemispherical photos will be analyzed for the central latitude/longitude in Washington (47.3826, -120.4472) and for (1) east-west oriented streams with the treatment bank assigned to the south; and (2) north-south streams with the treatment bank assigned to the east. Note, for north-south orientations, an east-facing treatment bank was selected for purposes of consistency, but shade values are expected to be similar to a west-facing treatment bank."

Taken together, this means the proposal should be called, “Riparian treatment effects on summer canopy cover for east-west and north-south streams in the center of Washington State.” This would be a lot easier to understand.

2. The proposal is written as if hemispheric photography is easy and quick. In my previous review, I made the point that hemispheric photography is a real pain in the neck, and most people are going to do something simpler, and that it is important to compare hemispheric photography results with simpler techniques like densiometer measurements. This would be a simple way to make the study more useful, but the authors also ignored this suggestion.
3. Because hemispheric photography in stream channels is difficult and time-consuming, it is important to conduct some prototype studies and refine the methods from the experience. The authors still don't have a plan for prototyping and testing their photography plan. I infer that none of them have actually taken hemispheric photography photos in a stream under a forest, and they don't appreciate all the problems that go with it. You might have a plan to take photos at set distances, but when you get there, there is a wood jam, or a deep pool, or low woody vegetation, or something else, and you have to set the camera somewhere else. How do you randomize that choice and avoid implicit bias in location? It takes a while to get the camera set up at each spot and pack it up safely for moving to the next spot. The whole process is slow. And then there is weather. If you have a partly cloudy sky, or too much cloud cover, or rain, your photos aren't going to work for estimating canopy cover. It rains or is very cloudy much of the time in western Washington. Photos are better in flat light of morning or evening. Consistently good photography days will be limited to the period from July 5th to mid-September. They investigators really need to do some trial runs and revise the plan based on what they find out. They also need to evaluate the 7.5 foot spacing relative to canopy gap widths and gap frequencies in channels. 7.5 feet is very close together for hemispheric photography, and I'm not sure that a small number of photographs taken at the density will provide a good sample of reach-scale canopy cover. I would also suggest that they scale the distances to the channel width, e.g. take a photo every channel width. This will scale the spacing to the size of the channel. Furthermore, five photographs is not a lot to capture the variability of canopy cover on a forested stream.
4. It's OK that they don't want to run shade models, but other people are going to want to use their data to test shade models, so they should make sure to collect all the data needed for common shade models. It would be a lost opportunity if such data weren't collected.
5. The authors have done a good job explaining why they are normalizing the streams to specific azimuths – basically because their riparian treatments are occurring only on one side of the channel, not both, and they want to know how that treatment works in best-case conditions.