

Hydrol. Earth Syst. Sci. Discuss., referee comment RC4  
<https://doi.org/10.5194/hess-2021-621-RC4>, 2022  
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## Reply on AC3

Anonymous Referee #2

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Referee comment on "Seasonal forecasting of lake water quality and algal bloom risk using a continuous Gaussian Bayesian network" by Leah A. Jackson-Blake et al., Hydrol. Earth Syst. Sci. Discuss., <https://doi.org/10.5194/hess-2021-621-RC4>, 2022

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I think the forecast development narrative is a bit muddled. To say that six-month-ahead wind speed forecasting "isn't quite there yet" is an understatement. If you are willing to consider 6-month-ahead wind forecasts, then why not also consider 6-month-ahead phosphorus forecasts? The latter is likely much more realistic.

Also, if the GBN can't provide any measure of credibility of the relationships (e.g., credible intervals for parameters), this is an important limitation that should be noted. I am not a GBN expert, so I can't provide guidance on how to do this. But it can obviously be done in most linear models (Bayesian or frequentist). Also, probabilistic predictions are easy to obtain from MLR models, so I'd be cautious about over-emphasizing this as an advantage of GBNs.

Overall, I'm not sure if I'll be able to recommend publication based on the proposed revisions. Of course, I defer to the editor.