MEETING MINUTES

CNH Lakes – Monthly Video Conference

November 2nd, 2018, 2:00 – 3:00 pm EDT (1:00 - 2:00 pm CDT)

Attendance: all project team members

1. Welcome & items from the team (Kelly & Reilly)
2. Full coupled model run & AGU paper (Kelly)
   1. Have already run baseline economic simulation model
   2. Want to push those land use/fertilizer rates through to GLM, where we can look at how much of the nutrient load makes it to lake; compare these results with observed nutrient loads from USGS
   3. Needed to scale up from coupled Cycles-economic land management model up to entire Mendota catchment; for now, scaled up baseline run to Yahara inflow
   4. Used PIHM water budgets to calculate nutrient concentrations coming into Mendota through Yahara, which were off by 7-10 orders of magnitude
   5. When not using PIHM budget, and instead comparing concentrations directly from Cycles with USGS, only 4 orders of magnitude off
   6. Why do water budgets from PIHM exacerbate the difference between calculated and observed?
      1. Chris thinks Cycles underestimates percolation (time lags wouldn’t explain this level of difference)
      2. Armen suggests that it’s more likely we are not using the same units, areas, etc. as USGS is.
3. Reminders about current authorship memos (Weizhe & Reilly)
   1. Quantifying benefits under agricultural BMPS
      1. Using Cycles-economic land management model coupling to quantify benefits of BMPs in terms of water quality and greenhouse gas emissions, focused on Mendota; deadline for co-authors in mind-November
   2. Management and team science
      1. Reminder about this authorship memo; deadline has just passed
4. Team Updates (everyone)
   1. GLM (Paul & Hilary)
      1. Paul & Aviah working on phosphorus cycling paper (mass balance changes in P in Mendota, layering on machine learning methods); expect to submit to L&O letters; paper should go out to co-authors mid-November
      2. A second paper will follow up, de-biasing the process model, applying it to long-term changes in P in Mendota
      3. Will soon be turning attention back to 38-year Mendota simulation; in good shape, but still work to do on calibration
      4. Will be hiring a postdoc for a related NSF-funded grant that started this fall, developing part of GLM software, etc. Hoping the postdoc can work on finishing up some of the things started with CNH Lakes.
   2. Cycles (Armen)
      1. Continuing to work on simulations, working more with Yunning
   3. Economic land management (Kelly & Weizhe)
      1. Thinking about another dissertation paper, about how to get managers to adopt BMPs
      2. Linking ag model with social science; Kelly has a new master’s student who is interested in comparing factors that affect BMP adoption across VA and Mendota
   4. PIHM (Chris)
      1. Lele and Chris have been working on Sunapee calibration; have very little data, so searching for some historical satellite data; hoping to have a reasonable calibration done very soon
      2. Have talked with Yu about preparing Yahara water budgets in a usable format; need nitrate outputs from Cycles; will give an idea of mean residence time as well as nitrate concentrations
      3. Kelly will update Dropbox with most recent baseline spreadsheet from Yunning
   5. GLM (Lars)
      1. Oneida modeling project will move forward in 2019-20, so will be a bit late for this project; still has the potential in the future to do this kind of coupling
   6. Hedonic (Weizhe & Sreeya)
      1. Not much to update on; working to revise GLM-hedonic paper
      2. Sreeya is still working on the scaling up dataset
   7. Civic engagement (Mike & Leah)
      1. Leah just got back from Wisconsin, where she visited with CLA. Conducted interviews, caught up with Paul, Hilary, and Aviah.
      2. Trying to code a year’s worth of material each week.
      3. Manuscript is still in the works; in the next month or two may be sent out as an authorship memo.
      4. Will have a workshop with Cayelan and Nicole to see if there are any findings from lake associations that can connect with GLM.
   8. Scaling up (Pat & Joe)
      1. Had a meeting of LAGOS-agriculture manuscript effort; on the right track as far as research questions and approach; working to address issues of data sources
5. Next video conference: Quarterly check-ins! (Kelly & Reilly)
   1. Please prepare slides – will send out reminders as we get closer
6. Conversation about energy balance – Armen asks, are we correctly estimating evaporation?