CNH Team Teleconference, 9/2/2016

Meeting Minutes

In attendance: Kevin, Kelly, Cayelan, Weizhe, Pat, Kathie, Julia, Hilary, Paul, Amy, Lars, Joe (new Ph.D. student on the project), Corinna, Armen

1. Welcome, items from the team
2. Priorities for this year
   1. Model linkages for Mendota by May 2017
      1. Complete Mendota model with calibrated individual models (excl. social science)
      2. Need workflow to pass data between models
      3. Goals for workshop
         1. Address kinks in the flow
         2. Work in teams to start working on papers that get at scenarios/model linkages
      4. Linkages may be deeper than originally planned (e.g., linked GLM/Hedonic models) will be presented at the meeting
   2. Model updates
      1. Cycles (Armen)
         1. Used to put in management practices, changed it so that decisions are made at some point about what crops come next (criteria to make selection depending on climate, yield, and prices); model then chooses rotation decision
         2. Having a meeting next week to incorporate P into the model
      2. SDP (Kelly)
         1. Working on conceptual model structure
         2. Collecting data to parameterize
      3. PIHM – no one on the line
      4. GLM (Cayelan, Paul, Hilary)
         1. Getting Sunapee up and running (Nicole, CCC, Kak)
         2. Complete calibrated model (1979-2013) for Mendota by end of September (Paul, Hilary)! Great calibration for 2009, waiting to see how that calibration pans out for other years/longer time periods. Focus on collecting water quality data, other data sources for the calibration. 15-year gap in data in the 1980s – will fill in with estimates from other model studies.
         3. Later down the road, interested in what comes out of PIHM
      5. Hedonic (Kevin)
         1. Working on purchasing data to extend timeframe
         2. Focus to date has been on data cleaning, addressing gaps in the data; at the point now where they can purchase what they want, realizing its limitations
         3. Discussing passing data between GLM and Hedonics at the end of September. Should be ready to start merging data as soon as they acquire it from GLM team. Can do estimation at the same time they’re merging the data. Should have a draft model estimated for the spring; may be revised after getting Sunapee data.
      6. Social Science (Kevin)
         1. Mike working on setting up visits to all 3 lakes
         2. Talked about outline of questions that will be asked at first meeting (exploratory to get a general idea of Lake Associations and data availability); help to understand who to come back and talk to, use in design of qualitative focus group work; all 3 meetings will be wrapped up by November
   3. Papers
      1. Framework paper update
         1. Cayelan and Kelly working on outline, will be in touch soon with writing assignments
      2. Graduate literature review paper update
         1. Sent authorship memo, deadline is next week – please respond!
         2. Modeling systems – How will coupled models help us understand decisions and the biophysical effects? Right now searching for papers. All graduate students are working on digging up literature. Meeting every 2 weeks and will plan to send out research questions soon.
         3. Kathie helping with co-mentoring of project.
      3. Other papers:
         1. Proposal paper on EMVs (led by Kelly, Kevin)
            1. Needs to lag after framework paper in the literature
            2. Can some of this draw on things done in other literatures e.g. medicine and triage, other fields? How has this idea been used before?
         2. GLM Mendota (led by Cayelan, Paul)
            1. 30-year hydrodynamic model new to the literature
         3. Cycles/SDP integration
      4. Others from individual modeling efforts?
         1. Oneida GLM (Lars), sabbatical for next year (Madison, Australia) likely to yield a paper
         2. Use GLM to work with carbon budget questions/dynamics on Mendota (Julia)
         3. P addition to Cycles (Armen)
3. Model calibration (Cayelan)
   1. How can we make sure that models are calibrated “enough”? “Enough” so that GLM for each lake generates comparable outputs? Should we have a standard across models and catchments to ensure that they’re comparable?
      1. GLM specifically (Paul); this is a difficult issue – How do you identify which parameters model is most sensitive to? What is the order in which you tune parameters? Need to be systematic in our approach. Hilary has put together GLM-AED parameter sets document online; will put Mendota model parameters up there. Need metadata on parameters and their effects on model. Need a well-articulated workflow that’s online and available for the team to use. Will likely be really useful in the future.
         1. Kathie – Great heads up to graduate group. Has anyone done this type of calibration before?
         2. Cayelan – need to use discipline-relevant metrics, but also need to think about cross-model calibration issues.
      2. Cycles (Armen) – order of calibration
         1. Get water balance right – water, soil moisture
         2. Biomass – growth, can’t get this right without getting water right first
         3. N and C – difficult in some environments
         4. There are some dominant parameters – important to know which ones are dominant
      3. PIHM (Armen)
         1. Takes hydrology of SSURGO (e.g., hydraulic conductivity, macropores), calibrates watershed simultaneously
      4. SDP (Kelly)
         1. Calibrates based on observed land allocation/crop cover
   2. Think about both time series and time step; what should we aim for across the project
      1. Kevin – what are we going to do for policy simulations? We may want to target the calibration to this; scenario design will play a role
      2. **Cayelan – can we capture this in a document? She’ll take the lead to start this. List what the metrics are, how you do the calibration. Perhaps a Google doc.**
      3. Armen – shared inputs will drive the calibration
      4. Cayelan – which parameters do we prioritize? For the case of GLM, they just don’t know. Input-output table will be helpful in making this determination. What is most important to downstream model? What about upstream?
      5. Paul – pragmatic point: in order for us to have a calibrated model, we need to know what we’re calibrating to. What are the most important factors to evaluating water quality when used for our broader questions?
      6. Kevin – how correlated are the variables coming out of GLM? Essential to identification in the statistical model. Can discuss outputs, but need to know whether they’re correlated as well.
      7. Paul – can be iterative about the calibration of these models.
4. Model input-output table
   1. Link on ODS home page
5. Administrative items
   1. Meeting minutes from May 2016 workshop
      1. Posted under Year 1 workshop in ODS
   2. ODS products section
      1. Please add posters, presentations, etc. Either email to Kelly or enter into ODS. Important for NSF reporting.
   3. Dates for 2017 workshop (Madison, WI)
      1. Last week of May, first week of June
      2. First checking on availability of venue; likely to be held on campus
   4. Video introduction
      1. Shared with LSPA, they loved it! Shared it with their Board.
      2. Please use it as a tool to engage people and inform them about the project.
      3. **Kelly – send out to the team so that they can share!**
   5. Other announcement(s)

Post-call conversation:

* Should we use GoToMeeting for the next call so that we can see the spreadsheet and have different people lead the conversation (can give others screen control).
* **Kelly – update team directory with Joe’s information**