

## June 25, 2020 Partners Working Group Call

Attendees: Güray Hatipoğlu, Thilina Surasinghe, Mike Dietze, Kira Sullivan-Wiley, Melissa Kenney, Chris Brown, Jody Peters

### Agenda

1. Introductions
  - a. Jody - EFI Program Manager at ND
  - b. Kira - Boston University Pardee Center. Co-chair for Partners and Social Science groups
  - c. Chris - NOAA. Has been working on ecological forecasting on local scale for a long time and is now division chief at NOAA
  - d. Melissa - Associate Director at IonE at U of MN. Research focuses on decision making and working with government
  - e. Güray - Earth Systems Dept of Middle East Technical University. Grad student - integrated ecological modeling
  - f. Mike - Boston University EFI Director. Lab does lots of ecological forecasting
  - g. Thilina - Associate Prof at Bridgewater University. Joined the RCN workshop. Landscape ecologists/conservation biologist and interested in forecasting at the community level
  
2. RCN NEON Forecasting Challenge -
  - a. On our last call the idea was to see who signs up to help design the forecasting challenges and then brainstorm partners to connect to these groups.
  - b. On the last RCN Steering Committee call we talked about wanting to figure out a strategic way to bring in Partner, Social Science, and CI folks to the Challenges, so they don't have to be on all the calls, but will help provide key input for the groups to think about
  - c. NEON Forecasting Challenge Topics and Leads
    - i. Community - beetle pit fall data - community level focus; Lead: Anna Spiers (CU Grad student)
    - ii. Ticks - population modeling concept; Leads: Sadie Ryan and John Foster (BU Grad Student)
    - iii. Terrestrial fluxes and ecohydrology; Lead: Alex Young (Early career researcher)
    - iv. Phenology; Leads: Kathryn Wheeler (BU Grad Student) and Chris Jones
    - v. Aquatics (temp, do, chlorophyll); Leads: pending
  - d. Update from Mike/Melissa - The 5 focal area represent a gradient of existing partners and their potential as having interesting questions for the Partners and Social Science groups
    - i. Partners/Social WG - doesn't have to help all groups do everything
    - ii. Think about where we will have the most impact

- iii. Example - don't have to worry about Phenology. The NPN has offered to operationalize the best forecast that comes out of the Challenge
- iv. Aquatic team is also probably more used to working with partners.
- v. The other 3 groups may need some more thought and input from the group
  - 1. Tick borne disease - obvious applications/connections, but don't think the connections have been built yet
  - 2. Beetle diversity - good diversity indicator, but it may be a more academic topic and more abstract than many organizations would be looking for
  - 3. Flux is probably in between the other two. It is not what land managers have been thinking about, but it does have important application for management and conservation
- vi. Things to think about
  - 1. NEON sites were chosen because they have less human impact
  - 2. The scale of early NEON forecasts will be hyper-local. It won't be scalable at the beginning.
    - a. Unless the managers are directly located at/near the NEON sites then it won't be directly usable early on
  - 3. For Ticks, beetles, flux - don't want to over-promise to partners early on. Want to look for early adopters/ideation. Don't want to look for folks who want forecasts that have concreteness or verifiability at this stage.
  - 4. Be thoughtful on the Partners side on how to engage partners and different levels of engagement
    - a. Could be a one-off engagement for input or could be more long-term. Want to make sure that the Challenge Design groups are ready to get input from potential partners
  - 5. Partners group responsibility
    - a. Don't need to populate all the Challenges
    - b. Don't need to have the same end goal across all Challenges
    - c. The Partners group should support Design teams on how to be thoughtful or comprehensively involve partners and best practices in that type of engagement
    - d. NEON - has aquatic sites, but they are freshwater, so don't get into marine side of things
  - 6. NEON Challenges - range of projects so there are some Challenges that are more proof of concept so may not be at the stage where they need the users that would use it in an operational sense
    - a. The projects are anchored to NEON data. They will take an iterative approach and will have multiple annual rounds of the competition and so will ramp up. Phenology may run

- for a dozen phenocam forested sites and next year will add in arid and grassland systems.
- b. By the last year of the RCN (it is a 5 year grant) we may be able to have spatialized forecasts that can be applied to a larger scale
  - c. But all the forecasts are coming from people who are creating them through their own efforts/pay - no one is being paid to create the forecasts
  - d. All EFI Working Groups are indirectly contributing to the RCN Challenges
7. This is an opportunity to think strategically - the group can connect to the Forecasting Challenge - but also think about how at the larger level we want to engage partners and know that it is not a one-size fits all situation
8. Sites question - were some of the NEON sites paired with long-term ag sites? If so, this might be helpful for the flux/water stress challenge.
- a. Mike: Not sure if there is an explicit pairing between NEON and LTAR sites. But the LTAR did come up in the Phenology discussion because they also have phenocams which would be a nice complement to the NEON phenocams. For the fluxes - not sure how many LTAR have flux towers and how real-time the data is. NEON flux data has a 1 month lag (we ideally are trying to get down to a 5 day and then to 24 hour lag) whereas Ameriflux lag can be on the order of a year(s). So for the fluxes it won't be as straightforward as the phenocams. May need to go PI by PI to get access to the flux data. Some PIs will be willing to get the fluxes for the ag sites and are interested in this. These may be an easier sell because it is easier to say what to do with the fluxes in an ag context.
  - b. Sites the Flux group is thinking of:
    - i. Konza Prairie - grassland site within a sea of ag
    - ii. Add a forest site and one arid/semi-arid site to give variability and therefore buy-in for the first round of the Challenge
9. For thinking about the Community forecasts and the potential to move to aquatic communities - a major concern for moving to the aquatic community data are the sampling timelines and repeatability. NEON only has 8 lake sites so far.
- a. Other groups that could be good to talk to:
    - i. GLEON - they have pulled together a lot of lake information globally and there is much forecasting already going on within the group

- ii. Mike knows there is a grassroots consortium of stream ecologists that might be good to connect with to see what they are pulling together
- 10. Expect that there will be synergies that will expand beyond NEON. Want to point to successes with NEON to promote that we can do the same thing with other organizations.
- 11. NOAA is very interested in having their national water flow predictions on a continental scale. Have a second model coming out that does that quite well. Moving into the forecasting of water quality. Any expertise on this from the outside (e.g., within EFI) that can be brought to NOAA would be helpful. NOAA wants to do biogeochemical modeling in lakes/streams on the continental scale. This is the National Water Model that is being done with USGS, US Army Corp, DOE.
  - a. This is a great example of how we can think strategically of how the Aquatic team can connect to the larger framework
- vii. In practice, how do the Partners (and Social Science) groups connect with the Design teams?
  1. There are clear leads for each of the Design teams. Once we nail down the Aquatics group - then we can have a dialogue across the leads
  2. The Design team group sizes are in the 4-10 individual range
  3. See if there is anyone in this group is willing to help be a liaison to each of the groups because they have a natural connection/personal interest in one of the 5 topics
  4. Bring attention to the Design team leads how the Partners/Social Science working groups are available to help.
  5. Every group has a lead as well as a liaison on the RCN Steering Committee to keep everyone connected.
  6. Jody to introduce Chris to Cayelan and can be a resource
  7. This group wants to be available to help the Design teams. Vague questions from the Design teams are also perfectly acceptable and we can work with them. This group can help teams think about with reach partners and early adopters and help make connections and having best practices for how to reach out.
  8. On the last call Kathy suggested creating a panel that could be a sounding board for the Design teams. Could start with an hour call to have an initial feel out for what is available. This could be the end of things or there could be follow-up connections and interactions following that.

3. Update on Kira's Survey ([bit.ly/EFIpartnerssurvey](https://bit.ly/EFIpartnerssurvey))

- a. About 40 responses so far. This isn't a ton of response, but good to have some.

- b. Kira hasn't started analyses yet, waiting for some more responses. Most of the responses are from academia, but also some non-profits and non-academic organizations.
  - c. One goal was to find out who is involved in forecasting. We haven't reached far enough with the survey yet. So far the people responding are those involved in or tangentially associated with EFI. How do we reach outside the EFI community?
  - d. Entry point - look at profiles on EFI website that already exist and also look at the online resource from Jake Weltzin's colleague, Sophia Liu, the Federal Crowdsourcing and Citizen Science [Community](https://www.citizen science.gov/#) (<https://www.citizen science.gov/#>).
  - e. How to use the data once they come in?
    - i. Who are we not capturing - is it because no one is doing the work, or is it because there are people who are doing the work but are not within EFI and how can we bring them into the fold
  - f. Ideas for Expanding the Reach of the Survey
    - i. Mike mentioned the survey at AMS (American Meteorological Society) Ecological Forecasting Committee meeting yesterday. This is a subdisciplinary standing committee - hopefully the survey will get included in the minutes. This would be a really good group to have the survey go out to. AMS interacts more with industry as compared to ESA, ASLO, AGU.
    - ii. Follow up with Jake Weltzin - lots of connections with folks who participated in USGS Workshop
    - iii. Follow up with Woody - NASA ecological forecasting program. A requirement of that program is that groups have applied partners.
    - iv. Kira should Schedule a time to talk to Marie Colton and Woody Turner
    - v. Thilina: International landscape for Ecology - have some private sector folks that were at the last meeting. Could use the listserv. Thilina will connect with Kira on how best to reach out to this group
    - vi. Mike will look up who to connect with from another group (Jody didn't catch the name of the group)
    - vii. Kira will follow up on the suggestions/names within the survey responses.
4. Work Plan – on the May call we started discussing Core Function 1 and compiling data sources from partners (e.g., NOAA) that everyone needs for creating forecasts (e.g., met data). Do we want to formalize anything on here further?
- a. Table this until the July call