

May 26, 2020 Social Science Working Group Call

Attendees: Kira Sullivan-Wiley, Deepak Ray, Jaime Ashander, Kathy Gerst, Melissa Kenney, Cindy Hu, Güray Hatipoğlu, Jody Peters, Laura Super

Agenda/Notes:

1. RCN Re-cap and Introductions of new people

- Jaime's presentation for the RCN: <https://youtu.be/MqBuKhv1-Mo>
- Chairs are currently Kira and Jaime. Do we want to keep them as chairs and do we have a system of changing chairs? Nothing is in place in other working groups
 - Are there things people in the group can help with
 - Look back in the notes to see when Kira/Jaime took on this role and then do a re-election after 1 year
 - Table, revisit in the fall and do a formal election process. Can self-nominate
- Introductions
 - Kira - post-doc at BU. Environmental social scientists focus on behavior and decisions
 - Jaime - post-doc at Resources for the Future working on environmental economics. Background in ecology, works at RFF on models at social-environmental systems working on fisheries and invasive species
 - Guray - decision models. Works in Earth System Science in METU.
 - Jody - works at ND mostly with Jason McLachlan, coordinates the calls and does lots of other stuff at EFI
 - Kathy - based at U of AZ works on National Phenology Network
 - Cindy - data scientist at Mathematica which helps policymakers evaluate programs in public health and policies. Environmental health degree
 - Laura - U of British Columbia, PhD candidate studying plant-microbe-invertebrate interactions given anthropogenic change. Also interested in art, general science, and education. Research training in botany, ecology, sustainability. Sustainable Development Goals (SDG Alliance at UBC) is something that she volunteers with - would be interested in linking the group with them. Kira will touch base with Laura after this.
 - Melissa - Knowledge Initiatives Associate Director at IonE at U of MN. Help government and policymakers make smarter environmental decisions. Excited about how this group can shape the criteria of judging an effective challenge and looking for funding to help with these efforts
 - Deepak - at IonE at U of MN. Climate agriculture land use. Interested in group because wants to make his findings more socially relevant and how decision making more relevant.
 - Mike - BU. EFI Director

2. Forecast topics are starting to converge around:

- 1) phenology

- **2) land carbon & water (esp plant stress)**
 - **3) aquatic instruments (e.g. chl a, turbidity)**
 - **4) ticks**
 - **5) something population/community**
- How can we shape some of the criteria for forecast evaluation?
- What research might we want to do around the Challenge? Funding ideas?
 - The Challenge has not yet been fully developed, so there is a great opportunity to come in at the beginning of the forecasting cycle. Help to support the forecasts that are developed as well as helping to design how the forecasts are used
 - Advance the science and advance the use of forecasting
- Scenarios...
 - A way this group can uniquely contribute. If forecast challenges were designed around where there are human scenario input needs or this might come in during Phase 2 or Phase 3
 - Anticipate that there will be work to develop an initial forecasting challenge. Won't be one challenge, but will be multiple rounds
 - Have a group that is more involved in the conversations happening around the forecast challenges. They are topically organized. So this group may want to divide and conquer to engage with multiple groups to think through opportunities to help challenges improve forecasting abilities and scope out the social science research opportunities
 - With weather forecasts, we have experts engaged with using/interpreting models (e.g. weather forecasters). There are social science disciplines that use expert knowledge using forecast models. Is there a role for an ecological forecaster similar to a weather forecaster?
 - Use expert knowledge to develop a better forecast from a combination of the forecasts outputs and the interpretation of the outputs
- How to make bridges, structures/frameworks to use existing partners/efforts already in place
 - Kathy can write out what NPN has available to use as a template for some of the other topics
- Scalability - are they hyperlocal forecasts replicating what happens at NEON sites or do they have a broader spatial range that makes sense to bring in partners.
 - Initially the forecasts will be specifically for the NEON sites. Scalability may be longer-term
 - Partner types -
 - very local,
 - those with federal jurisdiction or
 - early adopters - people who think about what models can be used for eventually when they get to the broader scale
- How can people within the Social Science group interact with the forecasting challenges? What are the plans for the challenge moving forward?

- Hoping to get people interested in the 5 topics scheduled to meet by the end of June with a similar monthly cycle. Will iterate to work on the protocols. The protocols will come back to the steering committee to make sure the protocols are harmonized across the 5 challenges so individuals who want to compete in all 5 challenges can do so
- Do not expect anyone will have an actual forecast running until next year
- Will treat 2021 as the first iteration to learn from
- Then do the challenge in rounds. Compete for a year, so how everyone did, people can readjust their algorithms and others can enter the competition
- There will be multiple teams developing forecasts for example - phenology. Won't be ideal to have each team contact the NPN network
- Social science advising may be useful - this could be a role this group can play. But don't want to give unfair advantage to certain teams and do not want to overwhelm stakeholders' time.
- Find stakeholders who are interested in participating. Have webinar at the beginning of the challenge which presents the needs of the stakeholders
- Depending on how we set up the criteria, we may have teams that want to reach out to stakeholders. If we incentivize forecasts that are useful for decision making, then teams may want to reach out to stakeholders
- Mike was expecting that forecasts are judged on raw numbers. Do we want to have a 6th challenge that focuses on visualization of the forecasts?
- How specific are the parameters going to be presented for the challenge? Everyone will need to predict the same species and sites. This will limit the applicability to a narrow interest if trying to forecast a specific site or species.
 - Still need to determine which specific variables are the aims of the forecasts - will be sorted out this summer
 - Once the forecasts are set up, Mike expects that many of them will be scalable
 - Still remains to see if other data can be leveraged for the forecasts. For veg phenology - seems fair game to leverage satellite data. But will only be scored against what NEON is able to observe
- RCN committee met last week. The distillation of 5 came out of that meeting/steering committee slack.
- With respect to Phenology - expect forecast will use weather data. Weather forecasts need phenology data. Leaf Area Index is important. Deepak hopes that one of the parameters chosen is the LAI at the site because it is an important feed into the weather model
- Will the teams for the challenge get to choose the sites? This will impact who the potential partners are. Folks will not get to choose sites.

- The Flux group that met on Day 2 of the workshop suggested picking one site that people need to forecast to be included in the challenge. Then folks can scale up to the tier 2 which would include the NEON core sites and tier 3 would include the relocatable sites
 - Contact partners - could also take a tiered approach. First approach only look at raw numbers, then teams with a certain accuracy could work with partners that revise. Do internal ranking of the raw numbers to keep the interface between partners so the partners are not overwhelmed.
 - Don't want to kick people out for not doing well enough. But do like the idea of finding a way to limit partners getting overwhelmed by requests from individual forecasting teams
 - Lots of opportunities to shape with the challenge and develop best practices of how to engage with partners effectively.
 - This group could submit a forecast based on expert judgment. This would be very different than other forecasts that will be submitted
 - Think about how Social Science and Partner groups will split their purview in this challenge
 - Partners to focus on communication with partners
 - How forecasters interpret, how stakeholders use forecasts, how to make better decision tools are Social Science
 - Role of expert judgment from the ecological perspective is wide open
 - Expect that there will be uncertainty estimates
 - Scenarios - water quality treatment to be run on top of aquatic forecast, or tick management to be run on top of tick forecast, or irrigation scenario run on top of water stress forecast
3. Blog Post Updates - We'll save this for the next call

4. Other Tasks Moving Forward

- People sign up for sub-groups/ WG committees/ groups
 - Forecast evaluation/ challenge design-- include ideas around scenarios (people interested in providing input: Melissa, Kathy, Kira, Jaime, Deepak - phenology, Guray - aquatic instruments)
 - How to use expert knowledge and expert elicitation to think about forecast outputs
 - Developing other social science questions/research that can come out of this challenge (Kira, Melissa, Kathy?, Kira will ping Melissa and Kathy to talk about offline)
 - Partners group liaison? Or working on the "partners webinar"
- Challenge topics
 - 1) phenology
 - 2) land carbon & water (esp plant stress)
 - 3) aquatic instruments (e.g. chl a, turbidity)
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