

December 3, 2019 Theory Working Group Call

Attendees: Mike Dietze, Amanda Gallinat, Chris Jones, Jaime Ashander, John Foster, Peter Adler, Carl Boettiger, Will Pearse, Jody Peters

Agenda:

1. Hypotheses for predictability in ecological forecasting
 - a. We have a long list and it could easily get loner rapidly. Challenge is wrestling it into something manageable.
 - i. Could collapse into categories or decide on which hypotheses to focus on
 - b. Find a leader before we dig into the content
 - i. Jonathan (Jono) Tonkin offered to lead
 - c. This may be more than 1 paper. Each category could be a different kind of paper
 - d. Not expected to answer hypotheses immediately, but could give the state of the science on where we are on the hypotheses and what needs to be done to answer the hypotheses.
 - e. Think about the roles different individuals are willing to put into this
 - i. Expect most people will be willing to write a paragraph here or there
 - ii. Jonathan
 - iii. Early career person
 - iv. Writing by committee
 - v. Judge by interest
 - vi. Jaime would love to lead but he is too busy with other things
 - f. When we determine our value added (e.g., simulation based, theoretical, etc). This define how the paper will move forward and the interests/commitments
 - g. Could do lit review or do quantitative analyses/simulations
 - h. Simulations could let us get going now. And could help with distributing the work
 - i. What is the road map for what we want to achieve? If Owen sorted everything out in his paper 5 years ago and we are done, then great. But not sure it is all sorted out. What is left to do? How do we get there?
 - j. This paper could set out the conceptual figures that then later get tested with real forecasts
 - k. Peter's paper is a nice example of how simulations can be used to go into detail about one of the hypotheses. We can't use this same approach for all hypotheses listed, but could pick one to test in a similar simulation manner.
 - l. The hypotheses fall into categories that could be tested.
 - m. Start with lit review. Which hypotheses can be supported in the current lit. Then if there are hypotheses that are pulled out of thin air, what kind of simulations can be done to test these or cut those out.
 - n. Jaime - definition of predictability. Ability to forecast simple time scale or forecast biological and evolutionary processes. These being different seems true, but is there a way to put these on the same playing field for this review. Look for a certain outcome value in the lit to focus efforts
 - o. 1st step - what do we mean by predictability and how do we test that.

- i. There aren't many forecasts in the literature so we won't find specific pieces that we will populate. Will need to translate other analyses done (.
 - ii. Where do we draw the line between papers that have done syntheses across pop model and time series. They have learned things, but not sure we can translate and use that directly. Even if we point out the limitations of why we can't reach conclusions from previous analyses.
 - p. Would it be possible to start testing hypotheses with the datasets we have in hand? Compadre/Comadre? Preliminary analyses? Limitations of those analyses? Something concrete we can get our teeth into?
 - i. Will P. is willing to have an undergrad look at; eg phylogeny and stability
 - ii. Would need help from someone with more experience with pop'n models
 - q. Problem we have is who is going to take the lead/push it through
 - r. How do people join EFI/Working Group? Peter is talking to a post-doc to try to convince him to join the group. We need to make it more clear on the website how people can join Working groups. Right now people can join as a Member by filling out the Google form and then they will be sent a Slack link. Anyone can join a Working Group at anytime we don't want the groups to be exclusive.
 - s. Homework for the Group: Revisit the Google doc and think of analyses/methods to test the hypotheses now**
 - i. Self-assign sections on the Google doc that folks are most interested in. If there is something that everyone is interested in we can focus on that, or if it is more distributed than can do something broader.**
2. New phone call schedule for Spring 2020.
- a. Jody will send out a poll the week after AGU before Dec 20 and include times that