

September 21, 2021 Joint Methods & CI Working Group Call

Attendees: Lyndsie Wszola, Jessica Burnett, Mike Dietze, Jody Peters, Josh Cullen, Carl Boettiger, Quinn Thomas, Kelly Heilman, Ben Toh
 Regrets: Rob Kooper, Jake Zwart, Matthew Brousil

Agenda/Notes:

1. R Shiny Seminar Series was great! Videos and Resources are here:<https://ecoforecast.org/workshops/r-shiny-seminar-series/>
2. Visualization/Decision Support Tools, User Interface Task View
 - a. High level organization is pretty good. For today - want to make sure text that was not assigned to a section gets put in.
 - b. Task Views are sections with paragraph explaining the general concept then an annotated bibliography of the tools available
 - c. Concepts section in this Task View may be more concept heavy and have fewer tools listed, but then after that section expect we will follow the more general format we have used with the other Task Views
 - d. Core Principles section
 - i. Think having this section would be useful before diving into tools, but we are not locked into what is listed there.
 - ii. Jessica will take a stab at adding text
 - e. How to make visuals section
 - i. Matt, Libby, and Josh have added a bit to this section
 - ii. Thinking that at the beginning of each section in this part could have a couple of paragraphs describing types of plots that are common in forecasting, tools used to visualize and examples
 - iii. Josh will start putting some wording together
 - iv. Don't want to reinvent things that already exist or are open source. So don't spend lots of time explaining all the types of plots, but could be useful to have a couple of representative examples. Useful for this section to point to resources that explain the tools - books, etc.
 - v. Claus Wilke - Fundamentals of Data Visualization
 - vi. How we make visualizations - focus on the core
 - vii. How we deal with data is meant to be common special cases - bar plots, scatterplots are basic plots. But visualizing uncertainty isn't covered in most basic visualization
 - viii. Time series - analyzing time series was covered in Task View 2. So in this Task View - just want to go over the plotting part of time series.
 - ix. Drop section 6 since we will cover it in this section
 - f. 7c which will now be 6c) - intervals around timeseries

- g. Not all the resources/tools need to be for R. If there are useful packages in Python, C, Julia, etc that are often used by the forecasting community, are good to add.
 - h. Want this to be 1) for people getting into forecasting to get an overview, 2) be for people who have been forecasting to learn about new resources they may not be familiar with, and 3) identify gaps and places where tools are needed
 - i. Static Spatial Visualization section - there are tons of different file types. What would be useful for this category?
 - i. Don't think of geotiff as a tool.
 - ii. What are the tools people use to make maps and other visualization that make static visualization that is separate from the interactive maps that can be used to make a snapshot
 - iii. Arc can make a static map - but if we are talking about these types
 - iv. Have Spatial Visualization section and then have subsection - explaining
 - v. Raster package example - what are the packages that are used to make maps
 - vi. A-3 in interactive could be moved to static and talk about specific interactive spatial visualization resources in section 8
 - vii. Maybe would want to introduce the ways that people make generic maps.
 - viii. What kind of familiarity do we think the audience will have? Will they know how to make maps?
 - 1. Not necessarily - but don't want to reinvent the first semester of GIS
 - 2. Have intro paragraph that talks about file formats, projections - why you don't use "plot" to plot xy coordinates
 - 3. Do we include something about remote sensing or punt to Task View 4 - punt to Task View 4 on data processing.
 - j. Kelly to help fill out the Static Spatial Visualization section.
 - k. Looking for someone to help with the Interactive Spatial Visualization section (Josh could help, but can't lead since he is already helping with another section)
 - l. Large data - see if Rob can help with this section
 - m. R Shiny - should it go under interactive spatial visualization or under decision support?
 - i. It is a mixed bag. Can be used as decision support tool, but not necessarily. Could give it its own section - not sure that is warranted. Or could cross reference it. Touch on why it is good for different purposes.
3. [Uncertainty Quantification & Propagation, Modeling & Stats](https://projects.ecoforecast.org/taskviews/) and Workflow Task Views now online <https://projects.ecoforecast.org/taskviews/>
4. Data Ingest, Cleaning, Management
- a. Placeholder until we are further along with the other Task Views or have an identified leader for this

5. [NEON Ecological Forecast Challenge](#) CI Update
 - a. Automatic downloading and processing climate from NOAA for each site. Extends 5-6 months.
 - b. 6 hour forecasts are being stacked together historically. Create an over year long time series of weather at each site. Allows for model calibration to be easier
 - c. NEON is producing gap filled met for their sites
 - d. NEON is producing eddy flux with only 5 day latency and working on reflagging the eddy covariance data. So by January will have a lot more to work with
 - e. Quinn working on file with every forecast with mean, sd, 95 predictive intervals, score - all info needed to visualize it. Want to run regularly (every day) so then Shiny app can access without having to analyses within the app. Also the file will be available for anyone to do analyses
 - f. Submitting JetStream renewal to continue to run Challenge