May 5, 2022 Translation Working Group Call

Attendees: Kira Sullivan-Wiley, Carl Boettiger, Jaime Ashander, Jody Peters, Millie Chapman, Chris Brown, Mike Gerst, Charlotte Malmborg, Güray Hatipoğlu
Regrets: Cliff Duke, Melissa Kenney, Diana Dalbotten, Theresa Crimmins, Jonathan Cummings

Agenda
1. Share ideas across the group about interests related to Translation and Actionable Science.
    a. Are there projects you are currently working on that would be beneficial to receive input about from the group?
    b. Do you have ideas of activities that the group can work on collaboratively?
        i.   Low hanging fruit to advance translational or actionable science within EFI or externally?
        ii. Longer-term funding opportunities for translation activities?
    c. Do you have ideas about a topic(s) that you would like the group to discuss?
    d. What drew you to Translational or Actionable Science and to get involved with this group?
    e. **See notes about the discussion below**

2. Plans for the next call - poll for a call in June.

3. Funding opportunities that seem relevant to the group
    a. The NOAA RESTORE Science Program plans to release its next funding opportunity in June 2022 to support previously planned actionable science in the Gulf. This competition will provide natural resource managers, researchers, and other stakeholders with funding to execute a planned, collaborative research project that informs a specific management decision impacting natural resources in the Gulf of Mexico. This announcement invites proposals that request funding to execute a previously planned, collaborative research project that informs a specific Gulf of Mexico natural resource management decision.
        i.   ~10 awards up to $2 million each
        ii. Seems relevant to the issues the Translational Science WG has been thinking about. Does anyone know people in the EFI-sphere working on the Gulf?
    b. **National Center for Ecological Analysis and Synthesis**
        i.   **Morpho Initiative**, https://www.nceas.ucsb.edu/morpho
        ii. **Morpho** is a new applied environmental science initiative that funds and convenes scientific working groups of government agency, NGO, and academic researchers to develop and accelerate management-relevant science in service of solutions. The work of these teams is enhanced by hands-on training in the cutting edge data science and management skills that are most relevant to both the near- and long-term challenges being tackled by environmental management and conservation professionals.

Morpho thus aims to advance workforce skills while developing science to tackle pressing issues facing our changing planet.

4. Discussion of the Working Group name, description of translational science, and website materials: https://ecoforecast.org/translation-actionable-science/
5. People who may have other ideas to have on another call
    a. Theresa - NPN, Bonnie - NEON

Discussion from the Call
1. Share ideas across the group about interests related to Translation and Actionable Science.
    a. **Are there projects you are currently working on that would be beneficial to receive input about from the group?**
        i. Jonathan - Input and thoughts on how to improve the use of science to inform endangered species decisions is always welcome and appreciated
        ii. Jaime - *A colleague at USGS is leading some stuff that may be of interest on changing hunter populations and harvest management. We might be ready to talk about it in ~3-6 months.*
        iii. Mike G. - Work with physical scientists who don't have experience working with social scientists or in the applied realm. Within this group we have talked about matchmaking to help people doing the modeling work understand the capacity in the network. People doing the modeling don't realize they need a match. So could come up with simple guidelines or guidance about potential needs, ways to fill them, and who or what type of person can fill those roles is useful. A map of what match making could look like.
            1. Thinking of focusing this internally within EFI for the matchmaking - connecting people like Mike G.
            2. Would some of this be educational focused - letting people know what social scientist do?
                a. Make it clear about what is involved in the co-production process
                b. Oftentimes a process is under budgeted or not given enough time to develop
        iv. Millie and Carl - from forecasts to decisions
            1. "AI for good" or "green security"
            2. Who designs the algorithms influences procedural and distributional equity.
            3. Connects to dimensions of power (agenda setting, action setting, world making)
            4. Things to discuss: Transparency - how to ensure the notion of transparency doesn't replace a deeper understanding,

sidestepping accountability (we can put code out there but will be people really understand it)

5. Accountability - who is accountable for poor environmental outcomes, if anyone?
6. Legitimacy - what makes a suggestion from a decision support tool considered "legitimate" in the eye of the user?
7. What to do within the group?
    a. Help reach additional social scientists? Spread the word? Create standards?
    b. Where are forecasts in general being translated into decisions?
    c. AI has the approach that we can make these forecasts and they will be great, but if it doesn't work, then we can't be held accountable
    d. How can we take advantage of better forecasts without trampling under they underlying issues.
    e. Where the rubber meets the road from forecast to policy
8. Mike G: from recent grant including AI. In expalinable AI -there is lack of naturalistic settings in an experimental sense. Classic tradeoff - internal vs external validity. This groups connection to stakeholder communities is a good way to connect for extended engagement. People in the AI world are scrambling for connections to do experimentally and environmentally valid experiments.
9. DEI group is coming up with a book to read this summer that seem related: Jody will look up the titles. That group talks about things that connect well to this idea. In Education group – Abby Lewis from VT has a group to create course material on ethic in forecasting. Connects to that idea (not totally fleshed out– right now a few case studies). Idea to get a pub eventually in an education journal and get additional case studies on QUBES portal. Seems like this could be an additional case study?
10. Jaime: Connection with natural resource agencies that have processes in place for co-production that may be unfamiliar. Building understanding. This problem has existed in other systems so
11. The way we talk about data or forecasts. We are not telling you what to do. We are just giving you the facts. You choose what to make of it. Recognition that things are transferring from private to public sector. We see the world as it is presented to us - but that may be naive

12. These conversations remind me a lot of the SDM literature. There are probably a lot of ideas that can be borrowed/adapted there.
13. Co-production, viewed as the great equalizer. It is framed as an all encompassing process. But there is still a decision being made about who gets to be in the room. Thinking about transparency in particular and being transparent about who gets to be in the room.
14. From Carl: I thought this paper has a nice discussion of the data platform issue: A Political Ecology of Data.https://doi.org/10.1177%2F25148486211043503

v. Güray - citizen science. Think there could be a way to connect citizen science to forecasting. One connection to social science is to learn how to retain citizen scientists on projects from a social science perspective.
   1. One potential to the world building question that Millie/Carl brought up was who gets to do that and to broaden the pool - citizen science is one way to get at this.
   2. Citizen science is strategic to gather data and can have a larger impact further

vi. Chris comment: I think Millie mentioned a great concepts that needs further discussion: prioritization. Trying to build something that works for everyone generally fails in the end, so ranking among end points / user is extremely necessary because resources are limited

vii. Think the name of the group "Translation" is appropriate for what we have been talking about - translating social science into the physical science realm.
   1. Thinking about operational forecasts - there is a person involved with the forecasts that are created. There is an expert component to interpreting the facts. The models are mathematical representations of nature, but there needs to be interpretation.
   2. Explaining the concepts

viii. Minding the Weather is another good book related to our discussion

b. **Do you have ideas of activities that the group can work on collaboratively?**
Jonathan - New to the group, so I'm unaware of what capacity this group has to work on things. To me if you're a member of this working group you're already aware of the importance of actionable science developed in conjunction with rather than apart from decision processes, so to me the activity that feels most relevant is spreading the message of our working group to the rest of EFI and

beyond. Maybe through micro-learning, conference sessions/symposia, or courses.

    i. Low hanging fruit to advance translational or actionable science within EFI or externally?

        1. Jaime - *Analysis/compilation of relevant decision timescales and actions for ecological forecasts (*[Bradford et al 2018](#)*18 Frontiers paper does some of this already) cross-walked with relevant biophysical or social forecast products*

Table 1. Timescales at which several example resource management decisions could be enhanced by anticipatory management

Management action	Anticipatory timescale		
	Short-term (subseasonal to seasonal)	Near-term (~2–20 years)	Long-term (multidecadal)
Avoid failure of drought-sensitive land treatments	✓		
Position fire suppression resources to maximize effectiveness	✓		
Predict outbreaks of water- or vector-borne diseases	✓		
Adjust grazing levels to avoid land degradation	✓	✓	
Specify fish and wildlife harvest intensity to ensure sustainable populations	✓	✓	
Facilitate regeneration of species requiring unusual conditions for juvenile survival	✓	✓	
Plan recreation intensity to minimize resource damage	✓	✓	
Implement control treatments on invasive species to reduce competition with natives	✓	✓	
Regulate water discharges from dams and reservoirs	✓	✓	✓
Allocate financial resources to areas with chronic challenges that are likely to worsen in coming decades		✓	✓
Manipulate vegetation structure (eg forest thinning) to enhance drought resistance		✓	✓
Identify appropriate adaptation or restoration strategies for long-lived species		✓	✓
Design infrastructure to reflect future climate extremes			✓
Triage conservation and restoration efforts to maximize effectiveness with limited resources			✓
Acquire new land and/or develop easements to sustain habitat abundance and connectivity			✓

        2. Güray - ***citizen science in 2 phases:***

           a. Surveying/ interviewing citizen scientists (the citizens) about what drives them to do citizen science, when they felt the strongest connection to the work they do, (if so) why they stopped doing it or left?

           b. Collaborating ecological forecasters who conduct citizen science, and both employ the knowledge generated from "phase a" and think about new projects.

    ii.

    iii. Longer-term funding opportunities for translation activities?

        1. Jaime *Interested in ideas. In recent federal calls I've seen (e.g. infrastructure money, America the Beautiful) translation is implicit and would be part of a multidisciplinary team. Not sure of anything translation-specific (i.e., the science of translation)*

    iv.

c. Do you have ideas about a topic(s) that you would like the group to discuss?

Jonathan - I think there is lots to learn about structuring decision processes in ways that make translational science more possible and productive, such as structured decision making, stakeholder engagement, facilitation, etc., so any co-learning about this is of interest to me.

d. **What drew you to Translational or Actionable Science and to get involved with this group?**

Jonathan - See above response. Eager to be exposed to how each you are effective, or what limits for effectiveness, at making science actionable given your expertise and discipline.

Jaime - *Interested in bioecon/decision analysis/optimization approaches to sustainability*