

## November 20, 2025 CMEF Call

Attendees - 28 signed in; estimate 31 total with Nima, Jody, and Cameron

Add your name and affiliation/community to the table, and fill in the icebreaker question.

Your name	Your affiliation / community	What EFI activities have you participated in?
<i>E.g. Nelly Narwhal</i>	<i>Unicorn University</i>	<i>I am on the newsletter mailing list, on Slack, and am signed up for the Theory working group listserv. I attended the EFI2024 Conference. OR None so far. This is the first activity!</i>
Jon Pye	Dalhousie University (Ocean Tracking Network)	None yet! Joined recently on a tip from a colleague in the US - eager to support ecological forecasting and to see how OTN-collected data can be useful to this initiative
Christopher Tate	Red Hat Collaboratory with Boston University	Pecan Ecological Forecasting in Red Hat OpenShift, EFI Cyberinfrastructure conference in Helsinki, building a <a href="#">Smart Aquaculture platform</a> for traceability to fish populations, fisheries, and fishing.
Caroline Owens	NOAA NCCOS	Slack/mailling list, EFI meeting in Blacksburg, have listened in on other working groups
Linus Stoltz	Commercial Fisheries Research Foundation	None so far!
Jennifer Paige	University of California, Davis	Slack and mailing list, but no activities so far!
Allison Patterson	Environment and Climate Change Canada	None so far, but helping with organizing EFI 2026 conference
Cameron Thompson	NERACOOS	EFI Cyberinfrastructure Workshop, this working group
Megan Feddern	NOAA	None yet! I work on using environmental data and ocean forecasts in stock assessment models and EFI / CMEF seemed like a great fit. I am particularly interested in coproduction and translation of forecasts

Your name	Your affiliation / community	What EFI activities have you participated in?
Andrew Allyn	Gulf of Maine Research Institute	I have participated in the Theory Working Group, am on the newsletter mailing list and on the Slack channel
Saeed Shafiei Sabet	University of Guilan	I am on the newsletter mailing list, on Slack, and am attending the Education/DEI working group, Theory working group and Methods working group. Because of different time zones I try my best to join most of the meetings. I really would like to develop underwater acoustics forecasting and soundscape assessment. I also like to communicate with other scientists and exchange ideas. My internet connection is not always stable! :)
Robert Isdell	Virginia Institute of Marine Science	Mailing list, Slack, and as many of the Seminar Series as possible
Marjy Friedrichs	Virginia Institute of Marine Science	Coastal and Marine Forecasting EFI Working Group; EFI May Meeting (virtual)
Kyle Capistrant-Fossa	Virginia Institute of Marine Sciences	Mailing list and seminar series
Elliott Hazen	noaa / ucsc	I've participated in EFI workshops in the past and am part of a group in Monterey that does a lot of miscasts, forecasts and projections for management.
Eric Ward	NOAA / University of Washington	I'm on the newsletter, and have participated in a couple virtual EFI workshops. I am interested in forecasts / projections especially with spatiotemporal models, and interested in general methods development
Christian John	UCSB	None! First timer :)
Ruby Krasnow	University of Maine	I'm on the newsletter mailing list and Slack, and try to make as many meetings of the Theory working group and EFISA as possible.
George Maynard	NOAA / Northeast Fisheries Science Center	I participated in a workshop on data management a few years ago in New Hampshire and am on the newsletter. I am interested in how to make in-situ observations useful to the forecasting community.
Kyle Oliveira	University of Maine /	On the newsletter, in the CMEF slack, and

Your name	Your affiliation / community	What EFI activities have you participated in?
	Bigelow Laboratory for Ocean Sciences	have participated in a few EFISA meetings
William Pardis	UC Berkeley EECS	None so far.
Katharine Studholme	Environment and Climate Change Canada	None so far! I am a new member of the Coastal and Marine working group email list.
Camille Ross	New England Aquarium	I participated in the NEFI course in June 2022
Abby Keller	UC Berkeley	I am co-chair of the EFI Translation WG.
Alison Fowler	National Centre Earth Observation, University of Reading	Attended EFI conference 2024, Finland
Eve Pugsley	University of Washington	None so far, all new to me!
David Ford	Met Office	None yet!
Dante Horemans	Virginia Institute of Marine Science	EFI mailing list and attending EFI sessions at conferences (AGU, Ocean Sciences Meeting)
Beth Bowers	Smithsonian Environmental Research Center	Slack

## Agenda

1. Welcome & icebreaker (Nima)
2. EFI overview and overview of EFI working groups? (Jody)
  - a. values, Slack, email list service, expectations
3. CMEF Working Group (Nima)
  - a. Vision and goals
4. Survey results (Nima)
5. How CMEF fits into the broader EFI community
6. Discussion - What is of interest to the group that joined the call and how does it overlap with the survey results

7. Next steps and ways to participate

Group brainstorm session:

1. From the survey results, what type of projects or what would you like to address in this working group?
2. What are you most interested in regarding developing forecasting projects and what does it look like for you?

Your name	From the survey results, what type of projects or what would you like to address in this working group?
<i>E.g. Nelly Narwhal</i>	
Christian John	<p>Model development, outreach and hackathons. I'm working on some coral bleaching and benthic turnover problems in the south Pacific and my specific interests are forecasting coral bleaching+mortality, and linking nearshore dynamics to land use/land-sea connections and climate+land use change; trying to get a sense of what is actually forecastable at what timescales etc but I'm also interested in forecasting more broadly and getting more ecologists thinking about uncertainty in the future, compounding uncertainty across multiple data streams</p>
Christopher Tate	<p>I'm creating ocean digital twins to simulate ocean fish populations with adjustable population and incubation parameters that change over time; and fishing boat digital twins that reduce the fish population counts as they pass through a fish population on the map. This helps with forecasting without having real world data. I would like to collaborate with real eco forecasters to know the right parameters to track in this forecasting.</p> <ul style="list-style-type: none"> <li>- Fishing boat digital twin demo: <a href="https://youtube.com/live/XxEqpwSfCwo">https://youtube.com/live/XxEqpwSfCwo</a></li> <li>- Smart Aquaculture Platform: <a href="https://smaq.comutate.org/">https://smaq.comutate.org/</a></li> <li>- I can offer complete self-paced training and events for building your own data-driven website and API to build open source digital twin models, and run them on your own computer and deploy them to the cloud for your own forecasting: <a href="https://computate.org/en-us/search/product">https://computate.org/en-us/search/product</a></li> </ul>
Caroline Owens	<p>Interested in operational forecast models and forecast evaluations; best practices for near real time data assimilation in models Want to learn more about how forecasts are used/understood by coastal stakeholders</p>
Elliott Hazen	<p>Shareable code libraries and frameworks for a) building forecasting models and b) operationalizing models. We have a group within NOAA working on GitHub flow for nowcasts led by Josh Cullen with Nerea Lezama Ochoa and Heather Welch.</p>

Jon Pye	Interested in making data in repositories like OTN and OBIS fit for consumption by operational forecasting models - and advertising some of the early attempts I'm aware of from government initiatives in Canada and the US to this group for a sense check on whether there are improvements we could make. Especially around DFO evaluations of MPAs and what ocean forecasts say about how they will change over time.
Eve Pugsley	Collaborative forecasting challenges/hackathons & contributing to development of models and open workflows/software, participating in methods focused discussions and webinars
William Pardis	Develop a better personal understanding of the data availability problem and how that can inform design and operation of marine instrumentation. How does, if at all, chemical sensor data (pH for example) get integrated into ecological forecasts?
Jennifer Paige	Interested in model development and uncertainty quantification, would be great to work on developing a framework on tracking uncertainty and communicating it in model output
Abby Keller	Stakeholder engagement, navigating uncertainty when supporting decisions
Cameron Thompson	<p>I want to learn about existing operationalized models and what we can learn from them. I.e. how can we make forecasts for decision makers / stakeholder adoption</p> <p>These forecasts can be at different scales  Distant future e.g. species distribution climate projection  Couple years, e.g. fisheries stock assessment  Near future, e.g. HAB</p> <p>The different scales may have their own challenges, e.g. near future data availability.</p>
Kyle Capistrant-Fossa	Open and reproducible workflows, forecasting challenges/hackathons
Alison Fowler	I am interested in understanding better how end users/decision makers use the forecasts (i.e. lower trophic-level) and what their needs are, and generally how to better engage with these groups.
Beth Bowers	I am interested in forecasting environmental data (such as ocean current, sea surface temperature, etc.) in coastal ecosystems that typically have low resolution data.
Andrew Allyn	Agree with everything mentioned above. One other thing on my mind is the model prediction piece and how these models are validated. This is both in terms of the overall approach (cross validation, leave out "future" observations), the metrics (correlation, RMSE, bias, etc), and also the scale that we calculate those metrics for (point-to-point comparison, overall averages within regions/fisheries statistics areas/etc.)

Saeed Shafiei Sabet	I am interested in using underwater soundscapes and exploring fish population dynamics and marine mammals ; a non-invasive method to explore underwater biodiversity and community dynamics. Also anthropogenic noise effects on aquatic animals from individual to community level.
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Your name		What are you most interested in regarding developing forecasting projects and what does it look like for you?
<i>E.g. Nelly Narwhal</i>		
George Maynard		As a data manager, I'm interested in learning how to make in-situ data more accessible and usable by the forecasting community. Also, I'd like to figure out a way to get those forecast products out to the commercial fishing industry.
Beth Bowers		I envision my role in this working group as an end user who applies these ecological forecasts to biological occurrence data. In that role, I can help to steer the results towards useful, adaptable information that has the capacity for broad applications.
Robert Isdell		Developing near real-time forecasts of anadromous fish migrations throughout the US Atlantic by working with a variety of other forecasters to incorporate both physical and biological parameters
Eric Ward		Identifying useful forecasting products that bridge interesting science / fishing industry needs, particularly in improving forecasts with emerging challenges of extreme environmental conditions, shifting distributions, changing behavior of fishermen, etc
Allison Patterson		Developing near real-time forecasts of seabird populations to support marine spatial planning and risk assessment. Also interested in how seabirds can be used as ocean samplers to support marine forecasts.
Jon Pye		Adding value to public datasets and showing how we can move them into policy, and maybe one day be able to identify and address risks to marine ecosystems before they are a reality.
Eve Pugsley		My current work focuses on developing models and forecast/projections that can be useful in decision making/management of protected anadromous species, but I am pretty new to this area of research and excited to learn about different methods and approaches used

		for different kinds of problems.
Marjy Friedrichs		<p>I'd like to hear others' opinions on how to demonstrate/quantify uncertainty for stakeholders and managers.</p> <p>Currently at <a href="http://www.vims.edu/cbefs">www.vims.edu/cbefs</a> we're providing 5 day forecasts of things like acidification, hypoxia, HABs, as well as various Chesapeake Bay fish species using habitat suitability models. (We also work on long term climate projections, in addition to our shorter 5 day forecasts.)</p>
Elliott Hazen		Very similar to Eric above, is assessing forecast skill and management need to look for intersections where forecasts can be used to be pro-active for fisheries / protected species management. These tools are also really useful alongside other scales of prediction like nowcasts and projections.
Caroline Owens		I am interested in forecast validation/evaluation and how that can feed back into improving models + forecast products. Also work on incorporating multiple types of in situ data into forecast models
William Pardis		Having a tractable impact with my efforts in marine instrumentation development by better understanding what they feed.
Megan Feddern		Engagement and communication with stakeholders and managers. Reproducible/shared workflows to access ocean model data and thinking about forecast scales that are useful for end users (fishing communities and managers)
Andrew Allyn		I think recently I am noticing that there are a lot of things we can do (speaking particularly to the species distribution model prediction space). Yet, the connection to specific end-users and decisions has been a bit more challenging to establish, at the same time, those connections are becoming more and more important to funders. Another, completely unrelated thing on my mind is how we interact with AI methods and make connections among prediction skill, interpretation, and explanation.
Cameron Thompson		How do we get these forecasts used in decisions by managers?
Saeed Shafiei Sabet		I think using underwater sound sources and soundscape can help to understand what is going on in an aquatic environment and any potential impact of anthropogenic noise impacts on aquatic animals, fishes, invertebrates and marine mammals. Passive acoustic

		monitoring. I would like to learn DAS distributed acoustic sensing and explore it to assess underwater soundscapes.

## Other Notes from the Call

- Note from Eric Ward - Eli Holmes @ NOAA has been spearheading the [Ocean Hackweek](#) (annually) and has been doing forecasting challenges as part of that work
  - Here's a link to the 2025 projects: [https://oceanhackweek.org/ohw25/projects/projects\\_thisyear.html](https://oceanhackweek.org/ohw25/projects/projects_thisyear.html)
  - Julia Lowndes @ OpenScapes has kicked off a NMFS open science initiative, and there may be ongoing forecast projects related to that work
- People want to know about open code, workflows, open data - where to find it
  - Elliott - has a nowcast tool that took 4 years to go from data to operations. Now that the code is available it makes it much easier to create new forecasts
  - Would be good to compare Elliot's workflow to the EFI forecasting challenge workflow and EFI standards (<https://doi.org/10.1002/ecs2.4686>) to see similarities and differences and see if there are places where the forecasting standards should be updated
  - Jon - data manager on OBIS - can these biodiversity databases help feed into the forecasting efforts? What more needs to happen to make them useful and good? Do we need to make new data products?
  - Jon - I've been trying to highlight the openness of the work of this group at Fisheries and Oceans Canada: <https://github.com/dfo-mar-mpas> for evaluation, not forecasting. A forecasting extension to the data aggregation and evaluation work they're doing on a per-MPA basis would be a dream.
    - forecasting isn't in the mix for this group at DFO yet, but they're doing a lot of the data aggregation and site-based evaluation that I think forecasting efforts like this one: <https://academic.oup.com/icesjms/article/73/2/263/2614459>
  - Create a place for data fusion would be a nice output for this group
  - This group can help provide a space to compile data so people know what is available and can assess what is useful for the applications
  - NOAA DisMAP tool: <https://apps-st.fisheries.noaa.gov/dismap/>
    - Hassan - We are trying to get ATN into DisMAP. see Karp et al. recent paper: <https://academic.oup.com/icesjms/article/82/3/fsaf024/8052165>
    - this feels like what A-BioTrack's trying to do through MBON as well? Same initiative or a parallel effort?
  - <https://www.gbif.org/network/ab013f3a-3c00-42cb-9fdb-cb5f4ba20a4b>
    - this gbif filter is a portal into all the terrestrial and marine tracking datasets that are following that standard.
  - <https://erddap.oceantrack.org>
  - There's an agreed-upon standard for downsampling tracking data (many observations of a few individuals) to sit alongside other observation methods. This is a start towards some of the challenges Hassan mentioned.

- Here are suggestions that came out of the CI workshop Hassan referenced: <https://projects.ecoforecast.org/efi-ci-workshop-2024/>
- Jon - We're doing something with the European Digital Twin at the moment, but our part is just for animal movement datasets at the moment: <https://www.europeantrackingnetwork.org/en/dtotrack>
  - there's a gentleman named Chris Monk who's been working especially on forecasting movement corridors for that effort.
- Translating forecasts and data
  - How to develop forecast with a decision in mind at the beginning
  - How to navigate communicating uncertainty
- Don't only need to think about fisheries
  - Sea birds - using an animal as an indicator for something else. Allison Patterson interested in this. Cameron Thompson also interested in using animals as indicators
    - MEPS theme session on seabirds as indicators: <https://www.int-res.com/abstracts/meps/v352/meps07070>
    - <https://www.fondriest.com/news/tagged-seals-seabirds-map-columbia-river-estuary-depth-salinity.htm>
    - <https://tos.org/oceanography/article/collaborating-with-marine-birds-to-monitor-the-physical-environment-within-coastal-marine-protected-areas>
    - <https://anibos.com/>
    - <https://www.osudashcams.com/>
  - Plankton, marine mammals
    - if someone can forecast sargassum we can use that to fund the rest of the initiative
- Cross organism methods - would be great to come together as a community to discuss common drivers that could be applicable across forecasting for different organisms
- Acoustics - underwater soundscape measurements can be helpful to assess anthropogenic noise impacts on aquatic animals. Moreover both experimental and field studies can develop understandings of anthropogenic noise impacts on aquatic animals from individual to community level
  - There are a few cool small-scale studies on this conducted in Biscayne Bay. where the city is right on top of a well-studied marine habitat
- Gap in forecasting is having the ocean models that can meet the need of forecasting