Working Group Descriptions

Click on each working group to see more details. This list is subject to change prior to the Conference

Decision Support and Ecological Forecasting

"Decision support" is frequently described as the primary end use of an ecological forecast. This working group will collaborate on a synthesis manuscript that assesses how conceptualizations of "decision support" have changed over time within ecology and conservation.

Forecasting Species Interactions

Limited data constrain species-interaction research to isolated species. Novel methodological advances offer possibilities to tackle data scarcity. Using hummingbird–plant networks, via citizen science data with AI-assisted extraction, this working group will develop interaction forecasts and discuss data integration, uncertainty propagation, and scalability.

Coastal and Marine Ecological Forecasting

The EFI Coastal and Marine (CMEF) working group is convening this session to advance ecological forecasting by developing ongoing projects, discussing challenges and opportunities across the coastal and marine forecasting pipeline, and shaping future priorities for CMEF.

Ecological Forecasting in Canadian Boreal Forests

This working group will kick off the Eastern Boreal Initiative, a project to forecast the distributions of landbirds under the effects of climate change and forest management. The Initiative is pan-Canadian, but with emphasis on Ontario, Québec, and Atlantic Provinces.

Understanding Drivers of Ecological Predictability

Current studies vary widely in how they quantify predictability. In this session, the EFI Theory working group will build on existing synthesis work to design a standardized "predictability pipeline" for ecological studies.

Data Visualization and Storytelling

Leveraging recent advances in data visualization technologies and design methodologies, participants in this working group will collaboratively learn how to construct and tell data stories to facilitate relationship-building and develop common data languages across diverse contexts.

Decision Support and Ecological Forecasting

“Decision support” is frequently described as the primary end use of an ecological forecast. This working group will collaborate on a synthesis manuscript that assesses how conceptualizations of “decision support” have changed over time within ecology and conservation.

Additional details: “Decision support” is frequently described as the primary end use of an ecological forecast, yet this term is often used abstractly in conservation and ecology. This working group will collaborate on a synthesis manuscript that assesses how conceptualizations of “decision support” have changed over time and across fields within ecology and conservation, as well as how these trends relate to key technological advancements and changes in conservation policy. We will develop typologies or generalizable categorizations that can help both ecological forecasters and decision-makers better envision the entire landscape of decision support.

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Forecasting Species Interactions

Limited data constrain species-interaction research to isolated species. Novel methodological advances offer possibilities to tackle data scarcity. Using hummingbird–plant networks, via citizen science data with AI-assisted extraction, this working group will develop interaction forecasts and discuss data integration, uncertainty propagation, and scalability.

Additional details

This working group will convene ecologists, data scientists, forecasters, and practitioners for a hands-on, collaborative discussion focused on building community capacity for forecasting species interactions under global change. Rather than centering on a single analytical outcome, the group is designed as a brainstorming and skill-sharing forum to advance best practices, workflows, and inclusive approaches for interaction-aware ecological forecasting within the EFI community.

Species interactions underpin ecosystem function and services, yet most ecological forecasts focus on single species because interaction data are sparse, unevenly distributed, and methodologically challenging. Pollinator–plant interactions provide a tractable and societally relevant entry point for addressing this gap, while raising broader questions about data integration, uncertainty propagation, and scalability that are shared across forecasting domains.

We will use hummingbird–plant visitation networks as a model system to anchor discussion and hands-on exploration. The group will draw on a dataset generated by over 120,000 georeferenced community science observations from iNaturalist documenting hummingbird flower visitation, paired with AI-assisted plant identification tools (Pl@ntNet) and an independently curated dataset of plants with hummingbird pollination syndromes. The resulting dataset may then produce interaction networks derived from observed species interactions.

Through guided discussion and breakout sessions, participants will:
a) Share and refine workflows for integrating community science data, AI-based species identification, environmental drivers, and network metrics.
b) Brainstorm how species interaction-based approaches can be made more accessible, reproducible, and reusable for EFI researchers with varying levels of technical expertise.

Example breakout themes include forecasting interaction responses across climate scenarios, designing place-based case studies in areas of high data density or high species diversity (e.g., the southwestern US or lowland Colombia), adapting these approaches to other taxa and interaction types, and designing specific procedures and protocols to better adhere to FAIR data management principles. Emphasis will be placed on open and transparent workflows, as well as cloud-enabled tools that lower barriers to participation across the EFI network.

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Coastal and Marine Ecological Forecasting

The EFI Coastal and Marine (CMEF) working group is convening this session to advance ecological forecasting by developing ongoing projects, discussing challenges and opportunities across the coastal and marine forecasting pipeline, and shaping future priorities for CMEF.

Additional details
This working group will convene the EFI Coastal and Marine Ecological Forecasting (CMEF) Working Group for an interactive discussion on advancing ecological forecasting in coastal and marine ecosystems. Participants will explore ongoing projects, share challenges and opportunities across the forecasting pipeline, from data collection to decision support, and engage in shaping the future direction and priorities of this new, interdisciplinary working group.

Topics may include regional downscaling in management-relevant forecasts, addressing non-stationarity under novel conditions, challenges and opportunities in transitioning forecasts to operational products, and exploring the development of an ocean forecasting challenge.

The session welcomes both current members and participants new to the EFI CMEF working group who are interested in contributing to its development.

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Ecological Forecasting in Canadian Boreal Forests

This working group will kick off the Eastern Boreal Initiative, a project to forecast the distributions of landbirds under the effects of climate change and forest management. The Initiative is pan-Canadian, but with emphasis on Ontario, Québec, and Atlantic Provinces.

Additional details

The Eastern Boreal Initiative is a multipolar research initiative in ecological forecasting via spatial simulation. Our aim is to forecast the distribution of forest songbirds, owls, and woodpeckers under the effects of climate change and forest management. The main focus of the project is the managed forest lands of Ontario, Québec, and the Atlantic Provinces, but some aspects of the project, e.g., species distribution modelling are national. The work will center the data products and modelling workflow developed by the Boreal Avian Modelling Centre and the ecological forecasting framework SpaDES (Spatial Discrete Event Simulation). The project began several years ago with funding from Environment and Climate Change Canada (ECCC), the Sustainable Forestry Initiative, and MITACS. We expect it to expand substantially through an NSERC Alliance grant proposal, partnered with ECCC, the governments of Yukon, Ontario, and Québec and others. This working group is intended as the Alliance project kickoff meeting

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Understanding Drivers of Ecological Predictability

Current studies vary widely in how they quantify predictability. In this session, the EFI Theory working group will build on existing synthesis work to design a standardized “predictability pipeline” for ecological studies.

Additional details

The EFI Theory and Synthesis working group will bring together new and existing members to advance understanding of the drivers affecting ecological predictability. While forecasting and simulation are essential tools for quantifying predictability, current studies vary widely in their approaches—from the metrics used to quantify predictability to how uncertainty sources are partitioned and analyzed. This variability hinders cross-system synthesis and the development of generalizable insights.

Building on existing synthesis work, this session will bring together participants to collaboratively design a "predictability pipeline"—a standardized framework for conducting predictability-focused ecological studies. Through guided discussion and breakout groups, we will:

A) Identify and collate existing best practices for key components, particularly regarding uncertainty quantification and predictability metric selection
B) Outline a generalizable workflow that can be adapted across systems
C) Discuss how to operationalize and disseminate this framework to the broader community
D) Identify promising case studies to show the utility of the framework

This session welcomes both existing Theory and Synthesis working group members and newcomers interested in contributing to this collaborative framework.

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Data Visualization and Storytelling

Leveraging recent advances in data visualization technologies and design methodologies, participants in this working group will collaboratively learn how to construct and tell data stories to facilitate relationship-building and develop common data languages across diverse contexts for ecological forecasting outputs.

Additional details

Developing a common language is critical for effective collaboration in interdisciplinary settings. It is even more important in collaboration with partners from communities where research and data science are not common frames of reference. In the field of data visualization, data comics are a promising medium for enhancing collaboration across contexts and settings, as they provide an organized way to balance words, images, and data in an easy-to-follow narrative. Building on an introduction to principles for inclusive ecological forecasting, this working group will leverage the latest data visualization authoring tools and storytelling methods to facilitate relationship-building and the development of a common data language across diverse contexts. The working group will introduce participants to a design process for creating data stories in a custom web application that supports multiple story-rendering environments (desktop, laptop, mobile AR, planetarium, projection-based mixed reality). The goals of the working group are to help participants 1) implement design justice-based power mapping by using targeted data stories, 2) create data stories using data comic-inspired templates, and 3) tell effective data stories to invite collaboration. Participants will work with curated ecological datasets and follow a guided design process in this predominantly hands-on working group on making and telling data stories to advance environmental justice in their ecological forecasting work.

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