**Operating Principles And Procedures**
**for the**
**Ecological Forecasting Initiative**
**Version 0.1**

## 1. Objectives

The Ecological Forecasting Initiative (EFI) is an international research consortium aimed at building and supporting a community of practice around ecological forecasting. EFI provides a grassroots, umbrella organization that facilitates communication, networking, and intellectual connections across multiple academic disciplines (e.g., ecology, decision science, physical environmental sciences, statistics, data science, and computer science) and across academia, agencies, NGOs, industry, and community scientists. In particular, EFI emphasises the "win-win" value of forecasts in: 1) iteratively updating and improving our understanding of ecological systems, in the search for a more general understanding of the predictability of such systems, and 2) making this science directly relevant to improved environmental decision making, management, and conservation. These foci are reflected in EFI's vision and mission statements:

> ***Vision: Forecasts to understand, manage, and conserve ecosystems***

> ***Mission: Solving the challenge of predicting nature***

This document outlines the Operating Principles and Procedures (OPP) underlying EFI's governance. This first iteration of the OPP represents the perspectives of the Founding Committee, and is presented for ratification with the acknowledgement that, as a living document summarizing our collective aims and experiences, it will change over time. It acknowledges that the continued growth and success of this consortium relies both on sound organizational principles and a willingness to continue to experiment and learn as a community of interest and practice.  At the least, future revisions -- under this or future Steering Committees -- will need to formalize other components, including but not limited to:
- Working Groups, Committees, Chapters, and other organizational structures;
- Formation of external advisory committees;
- The need for and purpose of meetings, workshops, and conferences;
- Intellectual property;
- Legal status;
- How EFI interfaces with other organizations;
- Policies and practices related to endorsement of member projects and proposals;

- Governance and conflict resolution; and
- Sustained funding and fiscal management.


## 2. Shared values and principles

EFI and its members support, and are committed to working toward, the following shared values and principles:

- Forecasting supports societal well-being and informed environmental decision making,
- Forecasting advances basic ecological research,
- Forecasting fosters and relies on Open Science (e.g. openly archived forecasts, code, and data) and the creation/maintenance of shared community tools, standards, and resources,
- Forecasting benefits from improved quantification, propagation, assessment, and communication of uncertainties,
- Forecasting requires training, collaboration, and community development, and
- Forecasting requires a safe, open, diverse, inclusive, respectful environment

In the spirit of the development of a robust community of practice for ecological forecasting, EFI does not require that members have put all of these shared values and principles into practice, but rather it seeks members who are actively working towards them.

We recognize that our diverse community brings different expertise and experience towards these aspirational elements; we see such diversity as a benefit, and necessary to the development of a diverse and inclusive community of interest and practice. Thus, we welcome all participants, and encourage patience, tolerance among all, and the holding of curiosity and respect as cornerstones of personal and professional growth.

### 3. Membership

3.1 Joining EFI

There are two types of EFI memberships, Individuals and Partner Organizations. Individual memberships are open to anyone who is part of, or wishes to join, the ecological forecasting community, and is not limited to forecast producers, consumers or research scientists. EFI Partner Organizations can include any existing organization (research network, observatory, company, agency, university, professional society, data repository, etc.) that wishes to partner with EFI to work together advance ecological forecasting and our community of practice.

Individuals and Partner Organizations may join EFI by affirming their commitment to the shared values, principles, and procedures described in this document.

To maintain a record of active members and partners, Individual and Partner members are asked to complete a registration form at https://ecoforecast.org/member-profiles that includes
   a. Name
   b. Contact information (email, social media, etc.)
   c. Primary discipline
   d. Working group affiliations (Appendix A)
   e. A 1-2 sentence synopsis of forecasting research or application area
   f. A 1-2 sentence on what you hope to get out of participating in EFI
   g. Optional:
      1. Photo (individual) or logo (Partner)
      2. Basic demographic (Individual) or organizational (Partner) information

The term of membership is three years, with membership renewable upon mutual agreement (the EFI Steering Committee will approve renewal by default unless an issue is raised, see Section 3.3). Members should update their membership information upon renewal or when a substantive change occurs. Items a-e and g.1 will be included in the member's directory, while items f, and g.2 will be kept private. Membership information will be retained to allow us to understand the needs and trends of our community.

Members who completed any registration form prior to the initial ratification of this document will be asked to reaffirm membership.

3.2 Benefits and Obligations

*Individual members*: Membership in EFI provides individuals with voting rights on EFI-wide decisions, eligibility to run for leadership positions within EFI (chair, Steering committee, etc.), and eligibility to compete for EFI internal awards and scholarships (e.g. student travel support to meetings) when available. In addition, members are listed on the EFI webpage, are able to submit content to the newsletter, and are able to propose changes to this document (OPP). By joining EFI, individual members agree to follow the community standards, values, and principles made explicit in both this document and the EFI Code of Conduct (https://ecoforecast.org/efi-code-of-conduct/), and to participate to the extent possible as an active member in the community.

*Partner Organizations***:** Organizations joining EFI benefit from the mutual association with the community of practice of ecological forecasters. EFI provides a grassroots, umbrella organization that facilitates communication, networking, and intellection connections across multiple academic disciplines (e.g. ecology, decision science, physical environmental sciences, statistics, data and computer science) and across academia, agencies, NGOs, industry, and community scientists. One delegated contact person for each organization also receives voting rights on behalf of the organization, same as an Individual. As with individuals, partner organizations and their participating individuals agree to follow the community standards, values, and principles made explicit in this document and to participate as an active member in the community.

3.3 Revocation and non-renewal of membership

Membership in EFI can be revoked at any time for violation of community values, principles, or code of conduct. Similarly, the Steering Committee will review lists of members coming up for renewal on a quarterly basis. In both cases, a proposal to either revoke or not renew membership needs to be raised by a member of the Steering Committee and then seconded by another Steering Committee member (Section 4). Following discussion, a vote to revoke has to pass by supermajority (Section 4.5). Members have the right to appeal by submitting a written appeal no less than 48 hr before a committee meeting, at which the appeal would be discussed and voted on.

## 4. Steering Committee

The EFI Steering Committee provides the primary means for representatives elected by EFI members to make collective decisions on matters related to EFI.

4.1 Steering Committee composition
The EFI Steering Committee consists of nine voting individuals. Four committee members are elected by the general membership. One member is a graduate student representative elected by the EFI student organization (as described in the separate student organization OPP document). The remaining four members are appointed by the existing Steering Committee.

Steering Committee appointments need to first be nominated and seconded by existing committee members during the window of time between when the results of the elected members are known and the first post-election Steering Committee meeting. All nominated individuals need to confirm their willingness to serve prior to that first meeting. The committee will then vote using a ranked voting system: If there are N candidates, each individual ranks all the candidates they approve of from highest (N points) to lowest (1 point).

Appointed committee members should be selected to help maintain institutional memory while at the same time allowing the engagement of new talent, energy and diversity from the membership at large. The EFI Steering Committee values and promotes diversity of all kinds, including but not limited to: race, gender, sexual orientation, socioeconomic class, geography, discipline, study system, job sector (academic [MSI/PUI/R1], agency, NGO, industry, etc.), and other under-represented groups (e.g. first-generation college students, people with disabilities, military veterans).

At any time the Steering Committee can (but does not have to) appoint additional non-voting members for terms up to one year to represent EFI-supported initiatives (e.g. EFI-RCN) that are not already represented on the committee. Non-voting memberships can be renewed annually by the committee.

4.2 Terms and Elections
Members of the EFI Steering Committee are elected or appointed to two year terms and are eligible for re-election or re-appointment. Nominations to the Steering Committee will be solicited four months prior to the end of term, with elections occurring two months before the end of term. Terms will be staggered so half of the committee is elected annually. Individuals must be EFI members to nominate committee members or to be

nominated. Self-nominations are permitted and members may nominate multiple committee members.

Members of the Steering Committee will appoint an individual or subcommittee to be in charge of the election. No one on the election subcommittee may be seeking election or re-election. The subcommittee will coordinate the solicitation, receipt, and vetting of nominations. Nominated individuals will be verified to ensure they are willing to serve and are asked to provide a short (<1 page) statement about their goals for EFI and professional qualifications, which the election subcommittee will distribute. They will conduct the election using a ranked voting system and notify the Steering Committee of results in a timely manner.

4.3 Meetings
The Steering Committee will hold regular remote/virtual meetings at regular intervals over the course of the year (e.g. monthly). Individual meetings should aim to be no more than one hour in length.

The Steering Committee will also hold at least one extended meeting annually (> 1/2 day, face-to-face when possible). As available, EFI, through externally raised funds or philanthropic gifts, aims to create some funding, available upon request, to facilitate diverse need-based participation in this meeting. If this is not possible, accommodations should be made for remote participation by individuals unable to fund attendance. Likewise, the Steering Committee is encouraged to leverage attendance at other events (e.g. conferences) to reduce the burden of meeting attendance.

4.4 Responsibilities and Authority of the Steering Committee as a body
The Steering Committee is vested with the authority and responsibility to:
    a. Set policies pertaining to the operation of EFI and its committees
    b. Organize Steering Committee meetings and conduct the business of the EFI
    c. Organize a regular members meeting
    d. Organize regular membership calls
    e. Regularly organize or promote participation in conferences (Ecological Society of America, American Geophysical Union, etc) and social events.
    f. Interface with other organizations
    g. Continue to set a forward-looking agenda, and launch initiatives, that support the growth of the ecological forecasting community
    h. Work towards the sustainability of EFI, including but not limited to pursuing grants, philanthropic donations, outreach, and partnerships

i.  Create standing or ad hoc committees to which the Steering Committee can delegate authority, for example to manage events (meetings, calls, conferences, workshops, RCNs), develop proposals, and launch initiatives
j.  Respond to the needs of the membership (including, for example, providing letters of support)
k.  Maintain and update the Operating Principles and Procedures (section 5)

4.5 Voting

For items voted upon by the Steering Committee to be adopted organization-wide requires a supermajority (60%), after accounting for conflicts of interest (COI). For example, in the absence of COI, this would require six out of nine votes. Conflicts of interest occurs in any vote that materially benefits a committee member themself, their advisees/advisors, or family members. Due to the close knit nature of this community, it is unrealistic to also exclude coauthors, collaborators, and primary institutions on all decisions, but committee members are encouraged to avoid voting on decisions that could reasonably be perceived as favoritism or special treatment.

4.6 Chair

The chair is elected by the Steering Committee from among current committee members that have served at least 6 months on the Steering Committee or the Founding Committee (Appendix B).  The chair serves a two year term. The election of the next chair will occur one year prior to end of term, with the Chair-elect serving in a transitional "associate chair" role, assisting the chair for that year. If a chair's or associate chair's term on the Steering Committee is scheduled to end during their term then their committee membership is automatically renewed. A chair is also eligible for re-election as chair. If a sitting chair is re-elected, the Steering Committee shall appoint an interim associate chair, who does not become Chair-elect unless selected in the next election.

In addition to the responsibilities and authority assigned to the overall Steering Committee, the Chair of the Steering Committee is vested with the authority and responsibility to:
a.  Lead the organization of the Steering Committee
b.  Call and conduct Steering Committee meetings on a regular basis
c.  Set the Steering Committee meeting agenda
d.  Ensure that the Steering Committee and subcommittees are populated
e.  Supply members with regular updates and communication
f.  Ensure the production of an annual report to the EFI membership
g.  Organize and delegate the tasks, activities, and initiatives of EFI.

4.7 Initiation of the Steering Committee

The initial adoption of the OPP, and the initial formation of the Steering Committee, is based on ratification by the Founding Committee (Appendix B). To ensure a staggered committee turnover, six members of the initial Steering Committee shall be appointed by the Founding Committee, with two for 2-years and four serving a 1-year term. Nominations (see 4.2) for the remaining two elected members and the student representative will be open immediately upon ratification until March 1, 2021 with elections to occur on March 15, 2021. Subsequent election dates will occur annually on this date.

Upon initiation, the Steering Committee shall elect a Chair who will assume the position immediately.

**5. OPP revisions & ratification**

The EFI Operating Principles And Procedures (OPP) is a living document that changes in accordance with the knowledge, experience, and interests of its members. EFI itself is an experiment, which will only be successful if we try new things and learn based on the evidence and experience. To allow this document to evolve we will be seeking input from the membership as a whole four times a year. All suggestions for additions, deletions, or modifications by members should be submitted in writing to the EFI Steering Committee by January 15, April 15, July 15, or Oct 15. These proposals will be discussed at the next Steering Committee meeting after that date and, if the suggestion was not anonymous, responded to promptly (ideally within two weeks of the meeting, but some proposals may require additional research or legal counsel).

Proposed changes to the OPP, based either on community contributions or Steering Committee initiative, will be circulated in writing to EFI membership, which will be given two weeks to provide written feedback. The Steering Committee has the prerogative to choose to adopt, amend, or reject proposed OPP changes.

Per Steering Committee voting guidelines (Section 4.7), the Steering Committee will then vote on whether to ratify changes to the OPP.

Appendix A: EFI Standing Committees and Working Groups (at the time of ratification)

- Theory & Synthesis
- Social Science
- Partners & Knowledge Transfer
- Education
- Diversity, Equity, & Inclusion
- Methods & Tools
- Cyberinfrastructure
- Standards
- Student Association
- Canadian Chapter

Appendix B: EFI Founding Committee Members

The following were the active members of the EFI Founding Steering Committee at the time of ratification:

Michael Dietze, Boston University (Founding Committee Chair)
Peter Adler, Utah State
Cayelan Carey, Virginia Tech
Diana Dalbotten, University of Minnesota
Andrew Fox, UCAR
Leah Johnson, Virginia Tech
Melissa Kenney, University of Minnesota
Christine Laney, NEON / Battelle
Jason McLachlan, Notre Dame
Jody Peters, Notre Dame
Quinn Thomas, Virginia Tech
Jake F. Weltzin, US Geological Survey and USA National Phenology Network
Ethan White, University of Florida

In addition, the following individuals were active in the initial formation of EFI but were not participating at the time of ratification:

Tony Janetos, Boston University (deceased)
Heather Lynch, Stony Brook University
Emily Read, US Geological Survey
Andrew Tredennick, West Inc.