

NATIONAL CENTER FOR ECOLOGICAL ANALYSIS & SYNTHESIS (NCEAS)



In partnership with Microsoft AI for Earth

Call for Synthesis Working Group Proposals

All the information needed to submit a proposal can be found at:

www.nceas.ucsb.edu/calls-for-proposals

National Center for Ecological Analysis and Synthesis

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Overview

NCEAS's mission is to accelerate discoveries that will enhance our understanding of the world and benefit people and nature, as well as transform the scientific culture to be more open, efficient and collaborative. Since its inception, NCEAS has convened working groups of experts to tackle pressing ecological and environmental problems, housed and supported cohorts of post-docs and early career researchers, and providing the tools, resources and training for researchers to interface with and analyze extremely heterogeneous environmental data.

With support from [Microsoft AI for Earth](#), NCEAS launches this research opportunity to inform the science of sustained, automated, and technology-driven ecosystem assessment. This call for proposals invites research to advance and accelerate the science and process of rigorous ecosystems assessments, leveraging the technological expertise and reach of Microsoft and NCEAS' strength in supporting innovative and robust synthesis science.

Ecosystem assessments provide a tool for both understanding the state of systems and the impact of change on those systems and human well-being. These assessments are becoming increasingly common and necessary, particularly in response to national and international efforts to track ecosystem change and prioritize actions towards meeting management and conservation targets. Yet, they can be data-hungry, computationally-demanding, and time-intensive to complete. We invite proposals that will convene multidisciplinary synthesis working groups to tackle questions around how to operationalize and automate rapid ecosystem assessments.

We invite creative ideas that will help advance this discipline. For example:

- What datasets (geospatial et al.) for conservation will be most important to include, and how can we leverage existing and cloud-based analytical tools?
- What additional cloud-accelerated global ecosystem assessment tools still need to be developed?
- How to apply approaches and tools across scales
- How to efficiently collate and integrate sufficient data at scales of interest
- How to capture and communicate uncertainty, drivers, and consequences of change over time
- Other topics that connect to the general theme of automated and technology-driven ecosystem assessment

National Center for Ecological Analysis and Synthesis ([NCEAS](#)) provides excellent meeting facilities and support for both virtual and in-person meetings; comprehensive in-house computing capabilities offered virtually or to groups that meet in person; and consultation and training for synthesis participants on analytical workflows, open and reproducible science practices, collaboration skills, and communication of results.

Key Proposal Dates and Deadlines

Proposal Due Date	Tuesday, November 10, 2020, 5pm PST
Awards announced	January 2021
Project finishes	18 months after award notification

Who Should Apply

Proposals for working groups may be submitted by individuals of any nationality who hold a position in an academic institution, free-standing research institution, scientific society, governmental or policy agency, non-governmental organization, or a consortium of such institutions. Working group composition should be diverse across multiple axes (e.g., career stage, discipline of study, gender, organization type, underrepresented groups, etc.) to accommodate multiple perspectives and provide complementary skills and experiences to enrich the working group process. Synthesis research generally requires a large effort to integrate multiple datasets, thus, inclusion of one or more people who are facile with data science and management is critical. We anticipate that different people will be needed with scientific, analytical, modeling, data management, policy, and related

skills. Please refer to the description of synthesis working groups for additional guidance regarding working group size and composition.

Funding

For the foreseeable future, due to the COVID-19 pandemic, we expect working group meetings will be virtual. We have resources allocated to support and accelerate these virtual meetings. In addition, when it becomes allowable, working groups can meet in person, at NCEAS in Santa Barbara, CA where the Center staff can provide significant logistical and technical support.

We ask that proposers budget for two virtual meetings and a third in-person meeting. NCEAS will provide technical and logistical support and training for virtual meetings as well as in-person meetings. Categories and types of resources available to support virtual meetings are listed in the budget template; we welcome additional ideas for ways that we can support virtual activities.

For the in person meeting, funding is intended to offset meeting travel, lodging, and per diem expenses.

Working group budget requests should not exceed US\$75,000, and overall cost will be one of the deciding criteria. This level of funding should be adequate to support a working group of 12-15 individuals meeting virtually (with support) and in person for four days in Santa Barbara. Working group costs may vary depending on group size, number of international participants, and meeting duration. Smaller working groups, of shorter duration, are welcomed (for example, one year projects, or groups with <12 participants) and may allow more working groups to be funded.

Please download and use this template to estimate your [working group budget](#).

What We Will Not Fund

- collection of new data or field research.
- projects that do not address the primary goals of this initiative.
- proposals requesting overhead or funds to be spent by the investigator at the investigator's home institution.

Data and Software Expectations

We encourage synthesis working groups to refer to [AI for Earth technical resources](#) and tools created by [partners](#) on Microsoft Azure. Access to and/or demos of these resources can be made available to working group members by the NCEAS/Microsoft partnership when a proposal is approved. Beyond that, we welcome the inclusion of data and technology tools from any sources (e.g., datasets and algorithms from individual researchers) or other networks (e.g. CZO, NEON, OBFS, ILTER) where appropriate to the questions being proposed. See [DataONE](#) to find existing data from thousands of researchers and many research networks.

NCEAS has a strong commitment to developing means to locate, access, analyze, and make data broadly available, and to encourage an ethic of information-sharing. To this end **awarded working groups must agree to document and make derived data and code publicly available on a data repository** according to the [NCEAS's data policy](#). We also generally promote open and reproducible computing practices to support transparent science and policy outcomes.

Diversity Expectations

Working groups that include a **diverse** array of participants who are committed to the project will be favored. While assembling a group, please consider gender balance, career stage, and opportunities to include individuals from underrepresented institutions and groups. Please feel free to contact the NCEAS staff to discuss mechanisms for ensuring broader participation. Working group members must agree to the [NCEAS](#)

[code of conduct](#), whether meeting in Santa Barbara or elsewhere and are expected to provide a brief diversity statement as part of the proposal process.

Technical Liaison

Each working group will be required to designate a *technical liaison* to work with NCEAS' data science support team on the group's computing needs, including collaboration capabilities (project management, mailing list and collaborative workspace), data management and processing, as well as analytical needs (modeling, and metadata development and distribution). This person should be closely involved with the analytical aspects of the project and a trusted member of the project leadership. The technical liaison could be one of the PIs, an early career researcher, or any other working group member who has agreed to fulfill this role. Support and training will be provided (see below).

Data Science Support

NCEAS provides a supportive and modern technology infrastructure for accomplishing your analytical and other computing/network-based needs. We have dedicated in-house staff to handle your queries and requests, ranging from set-up of collaborative tools (e.g., shared drive, mailing list) to accessing shared analytical servers. General training in reproducible workflows and remote collaboration techniques is available to funded working groups. More detailed information on this support can be found on the [NCEAS data science support page](#) and at the [NCEAS Learning Hub](#).

Reporting

Principal investigators on approved projects will be expected to provide a project abstract of research objectives, anticipated work, and desired outcomes that will be posted on the NCEAS website shortly after funding approval. NCEAS and MS AI for Earth support should be cited in publications, as described in [the guidance for synthesis group PIs](#), and copies of articles accepted for publication should be sent to NCEAS staff for archiving. Questionnaires requesting updates on synthesis working group experience and products are sent quarterly to PIs and are very important to measuring the success of synthesis working groups. PIs may also be asked to participate in periodic synthesis webinars and other outreach engagements.

Helpful Links

Guidance for Collaborative Synthesis Science Working Groups (<https://docs.google.com/document/d/1hmOJ8xgyiqYE00ynWsKbTAbcSxWV7Zmkz5eTCTdvB7Q/edit#heading=h.sr1rcfxuxiy>)

Scientific Support at NCEAS (<https://www.nceas.ucsb.edu/programming-support>)

NCEAS Data and Information Policy (<https://www.nceas.ucsb.edu/data-and-information-policy>)

NCEAS Code of Conduct and Strategic Plan for DEI (<https://www.nceas.ucsb.edu/diversity-inclusion>)

Prior NCEAS synthesis working groups (<https://www.nceas.ucsb.edu/workinggroups>)

[Return to Top of Document](#)

Guidelines for Proposals

The main body of the synthesis working group proposals is relatively short (fewer than 2000 words **excluding** Cover Sheet, Figures, Tables, Literature Cited) but we require a number of supporting tables and documents (Table of Participants, Table of Datasets, CVs, Budget) that are described below. Please follow the formatting and submission instructions provided below.

Include the following in your proposal, where applicable:

COVER SHEET (1 page, not included in proposal body word limit)
Date of Submission
Descriptive Title
Short Title – Two or three words for use as a project name (25 characters max)
Working Group Leaders' Name(s), position(s), and complete contact information. If more than three PIs are included, please indicate a primary point of contact.
Project Summary – A brief scientific abstract of your project (200 words maximum)
Proposed Start and End Dates – Proposed start and end dates of your project (month, year)
TABLE OF PARTICIPANTS (See suggested template, not included in proposal body word limit)
Names and affiliations of participants (maximum of 16). Please indicate what expertise they bring to the project (scientific and analytical), their role in or contributions to the project, career stage, and their participation status (<u>confirmed</u> , <u>invited but not confirmed</u> or <u>to be invited</u>)
Technical Liaison. Identify a technical liaison(s) in the working group for NCEAS computing staff. This participant should have analytical expertise. See above for description of the role of Technical Liaison.
Identify the person(s) who will be in charge of archiving the produced data. (This could be the Technical Liaison or other participant.)
TABLE OF DATA SOURCES (See suggested template. Not included in proposal body word limit.)
Brief summary of key datasets to be used in the project (e.g., ecosystem type, taxonomic group, key metrics or processes, time series length, location, number of sites or studies)
Source of the data: include URL/doi when publicly available and/or a person of contact (data owner)
Status of the datasets (for example, "will still need to be downloaded/acquired", "'raw' datasets are in-hand", "some exploration of datasets has been done", "extensive harmonization of datasets has already been completed")
List any anticipated legal or practical constraints associated with acquiring, using, and sharing project data.
BODY OF PROPOSAL (Not to exceed 2000 words, excluding figures and tables, literature cited)
Problem Statement: Clear and concise statement of what is to be done, why it is important, and how it will be accomplished. Provide a clear rationale for why this research would benefit from NCEAS support.
Proposed Activities: Brief description of methods and why they are appropriate.
Description of Data Sources: if not fully described in the Data Sources table (above)
Anticipated Results: Include description of expected outcomes, data products and software products.

Is this proposal (or a closely aligned proposal) under consideration elsewhere? If so, please briefly describe the circumstances.
Anticipated Benefits: Identify key stakeholder/audiences/potential external collaborators for working group outputs with as much specificity as possible.
Working group management: Please summarize how the PIs intend to 'manage' the project to support productive collaboration. This could include (but is not limited to): methods for communication between in-person meetings, group facilitation, project management tools. Please include details for meetings that will be virtual. See Virtual Collaboration resources on the NCEAS website for guidance.
Timetable of Activities
Working Group Diversity: Brief summary of specific efforts to achieve working group diversity and maintain and inclusive culture.
OTHER REQUIRED DOCUMENTS (not included in proposal body word limit)
Curriculum Vitae for each working group leader: Two (2) page maximum, NSF-style biosketch
Budget (use provided budget template)

Formatting and Submission Instructions

Proposals will be accepted in digital format only, as a PDF file. Proposals should be submitted as single, complete documents, formatted to standard letter size (8.5" W by 11" L) with graphics embedded directly in the document. The body of the proposal should follow the cover sheet, followed by tables (Participants, Datasets) and CVs. Budget tables should be last in the pdf. Do not send compressed collections of files, such as .ZIP files.

Send the proposal document as an email attachment to proposals@nceas.ucsb.edu. All those who submit proposals will receive an email confirming receipt within 24 hours of submission. If you do not receive a confirmation email, please call (805) 892-2500 with the lead PI's name and proposal title. NCEAS administrative staff will follow-up with you. Please contact proposals@nceas.ucsb.edu if you have difficulty submitting your proposal, or if you have extenuating circumstances that would prevent you from submitting a digital version of your proposal by the deadline.

For answers to questions about how to submit that are not addressed here, please email proposals@nceas.ucsb.edu or call (805) 893-2500.

For questions about proposal content, please contact Ben Halpern (Halpern@nceas.ucsb.edu).

Proposal Review Process

Proposals are evaluated for their scientific merit and novel approaches. Proposals will also be evaluated for appropriate expertise (both scientific and technical), as well as plans for inclusion of researchers from underrepresented groups (URGs). The proposal review panel includes both NCEAS scientists and non-NCEAS scientists. At the request of the panel, NCEAS may obtain additional reviews from other individuals with expertise of special relevance to the proposed research.

The final decision on which proposals to fund will be made by the NCEAS Executive Director, in consultation with partners at Microsoft. Based upon panel discussions, NCEAS staff may request some modifications to the proposal (e.g., adjustments to working group size or composition, inclusion of additional data resources) before funding is awarded.

Proposals received after the deadline will be returned without review. Proposals that are clearly inappropriate for this call (e.g., those requesting overhead, funds to be spent at the investigator's home institution, or funds intended to collect new data) will also be returned without review.