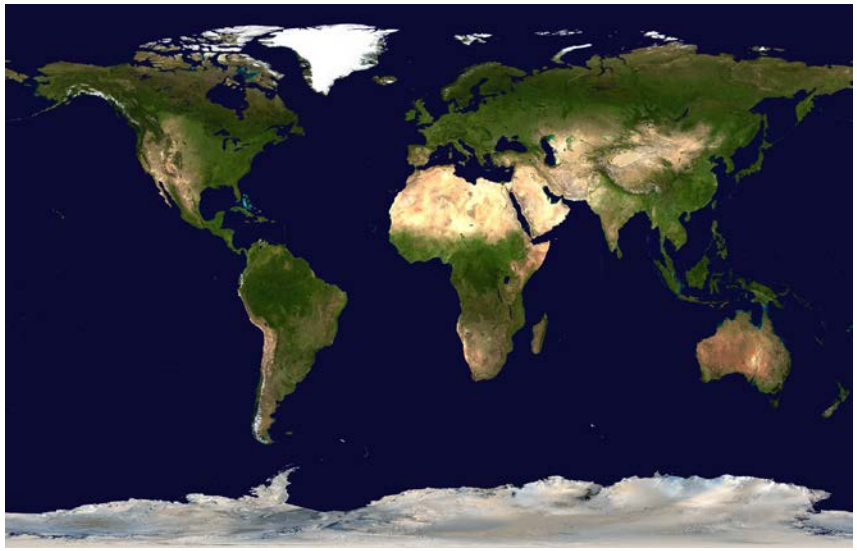
Models: EPSCoR and National Initiatives

Potential Example:
Contribution to US Global Change Research Program



National Science Foundation
Experimental Program to Stimulate Competitive Research (EPSCoR)

Project Directors and Project Administrators Meeting

EPSCoR: Partnerships to Advance Excellence in Research and Education

EPSCoR Jurisdictions and Climate Change

- Current Track 1 (2013):

  ≈ 18 awards with an environment focus.

  ≈ 11 awards related to climate science.
- Current Track 2 (2013):

  ≈ 6 with an environmental focus.

  ≈ 3 with a specific focus on climate.

≈ 22 Jurisdictions with some EPSCoR funding for environment

The 31 EPSCoR jurisdictions in this unique federal-state partnership offer **NSF** an incredible **"test bed"** for its new initiatives. EPSCoR institutions and research faculty have experience in S&T areas of national importance including energy, **climate change, diversity**, defense, **scientific computation** and homeland security.

NSF EPSCoR needs to become more adaptive in order to improve strategic planning and to take advantage of new collaborative research opportunities in areas across states where EPSCoR has built strength relevant to S&T opportunities emerging at the **national and international levels.**

Prior PD Direction

- *'Grass-roots' – target at the researcher level*
- *Care to complement not compete with other initiatives being developed by researchers in EPSCoR jurisdictions*
- *Highlight EPSCoR strengths*
- *Synthesis not new initiatives*
- *Some new resources are required*

The Concept

EPSCoR jurisdictions will collaboratively seek a partnership with NCEAS (@ UC Santa Barbara) to conduct one or two synthesis activities that address priority questions of the US Global Change Research Program and leverage past or current EPSCoR investments.

NCEAS

National Center for Ecological Analysis and Synthesis

- Mission
  - Rapidly advance ecological knowledge through analysis and synthesis of existing data to address critical environmental challenges for the benefit of nature and the well-being of people;
  - Provide computing solutions to enable networked scientific collaboration by leveraging NCEAS' innovation and leadership in informatics;
  - Promote the skills, knowledge and collaborative culture among scientists, policy-makers, and resource managers necessary for transformative research and to speed application.

Courtesy of Frank Davies, NCEAS Director

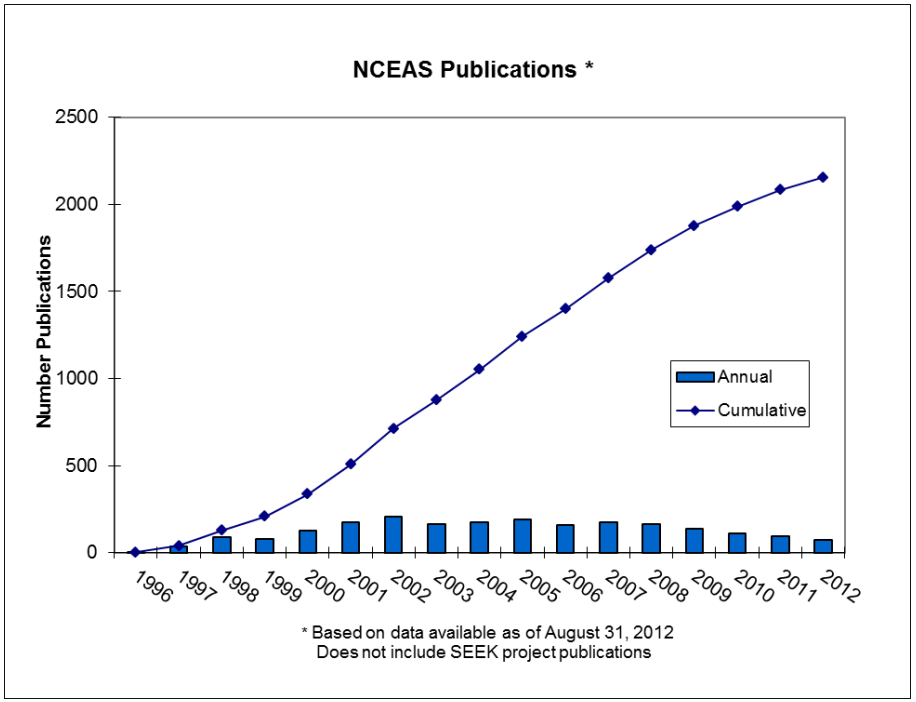
NCEAS Origins

- *"Synthesis is needed to advance basic science, organize ecological information for decision makers concerned with pressing national issues, and make cost-effective use of the nation's extant and accumulating database"* (Ecological Society of America 1993)

- NCEAS opened at 735 State St. in 1995
  - NSF, CA, UCSB support
  - Community operated
  - Mainly ecologists
    - Working groups, sabbatical fellows, postdoctoral fellows
  - UCSB administrative leadership
    - Bill Murdoch, Jim Reichman

1995-2012: What happened?

- **Over 5,000** participants in
  - **250**+ working group projects
  - **200** "hosted" projects
  - **119** Postdoctoral Associates
  - **86** Center Fellows (sabbaticals)
- Participants from
  - **49** states,
  - **67** countries
- **750+** academic institutions
- **600+** non-academic entities (companies, NGOs, agencies)
- Participants belong to > **550** scholarly societies



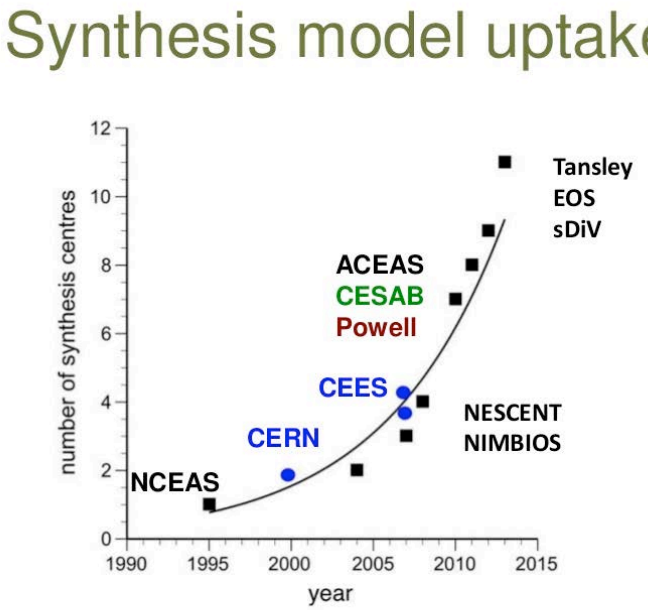
Examples of NCEAS Synthesis and Research

- Towards a theory of marine reserves
- Fire's place in the earth system
- Biodiversity, conservation and ecosystem services in managed landscapes

NCEAS Impact

"Ecology transformed" (Hackett et al. 2008)

- Validated the synthesis center concept
- Promoted a culture of broadened collaboration among ecologists and allied disciplines
- Accelerated progress in emerging research areas (e.g. spatial ecology, disease ecology, ecosystem services)
- Promoted best practices for data sharing and open science (eco-informatics)



NCEAS

National Center for Ecological Analysis and Synthesis

NCEAS News

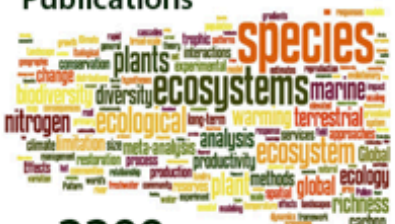
Home | About | Science | Informatics | Training | News & Events | Contact Us

Advancing Ecology for Nature and Human Well-Being

Photo Credit: Mark Schildhauer

SCIENCE | INFORMATICS | TRAINING

Number of NCEAS Publications



> 2200

Word cloud of 100 most cited NCEAS publications

Featured Media

- **Interview:** *SNAP: Science for Nature and People*
- **Interview:** *Drought and Global Warming are "One-Two" Punch for California*

NEWS & EVENTS

- NCEAS researchers find cities support more native biodiversity than previously thought
- New maps show expected global species shifts due to climate change
- NCEAS report on gray wolf scientific peer review issued by US Fish and Wildlife Service
- NCEAS Informatics team is on a mission
- Drought and global warming are a "one-two punch" for California

More

RESOURCES FOR SCIENTISTS

- Current Working Groups
- Data Repository
- Informatics Tools and Products
- Research Publications and Other Products

SUPPORT NCEAS

We're engaging the best minds in ecology to address some of the most important environmental problems of our day.

Support NCEAS

Step One

- Submit a Workshop Proposal to NSF EPSCoR Office
- A 'Host' jurisdiction submits the proposal with input from a planning committee
- Proposal includes the proposed collaboration with NCEAS, rationale for the general topic areas for the NCEAS solicitation and selection criteria including adherence to the ideals of EPSCoR and building on past EPSCoR investments

Step Two

- Develop an NCEAS Solicitation. Eligible to any team of scientists from EPSCoR jurisdictions. [May include open slots for internationally recognized experts or additional experts from EPSCoR jurisdictions (similar to PASI, NATO ARW)]

- NCEAS conducts the review process and makes the selection independent of host jurisdiction or planning committee

- Proposing team should be diverse and represent the ideals of EPSCoR

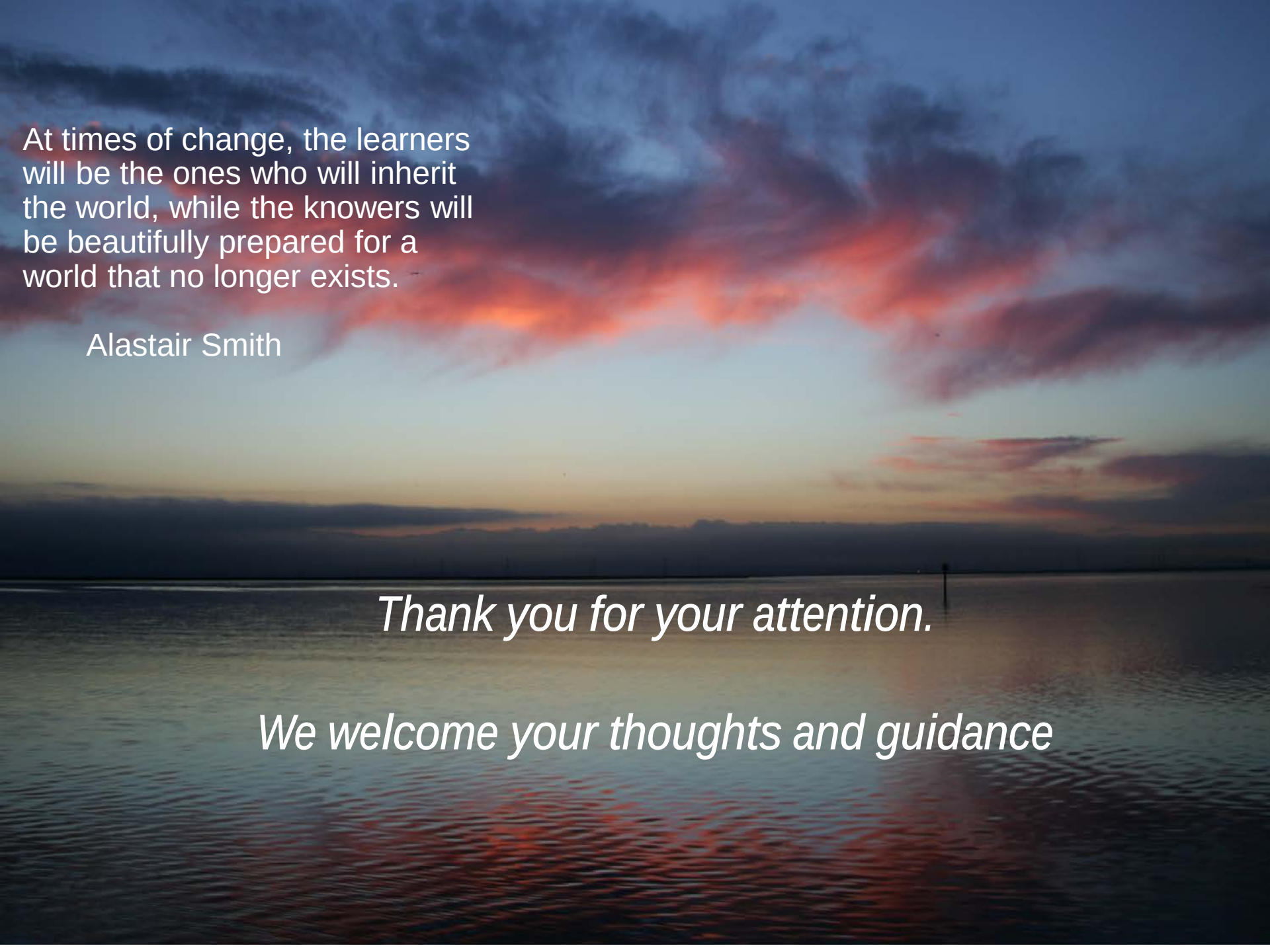
Further details in concept paper

Tentative Timeline

May 19:	Present NCEAS collaboration concept in PD/PA meeting
June 30:	Submit workshop proposal to NSF EPSCoR
September:	If workshop proposal is approved, NCEAS issue solicitation for inter-jurisdictional synthesis activities.
November:	Synthesis proposals received by NCEAS and review process starts.
January:	Successful synthesis activity selected and announced by NCEAS
2015:	NCEAS synthesis activity conducted (typically 9-12 months duration).

Questions

- Should we proceed?
- Should researchers from ‘host’ jurisdiction be eligible
- Refine and focus topic areas – all interested jurisdictions should review and comment
- Planning committee composition?
- Other comments on process, including timeline
- Host jurisdiction?


At times of change, the learners will be the ones who will inherit the world, while the knowers will be beautifully prepared for a world that no longer exists.
Alastair Smith
Thank you for your attention.
We welcome your thoughts and guidance

Questions for discussion session

- Should we proceed?
- Should researchers from ‘host’ jurisdiction be eligible
- Refine and focus topic areas – all interested jurisdictions should review and comment
- Planning committee composition?
- Other comments on process
- Host jurisdiction?

Suggested Topic Areas for NCEAS Solicitation

Insights into sectoral vulnerabilities

- Coastal vulnerability to Sea Level Rise (SLR) and adaptation strategies
- Climate change and human health risks
- Infrastructure vulnerability
- Water resources. Topics include security/reliability of future water supplies under shifting trends in precipitation patterns, landscape characteristics and snowpack. Water quality changes resulting from climate change.
- Natural resources management issues. Topics include species conservation, invasive species, drought, and wildfires. Investigation of tipping points, regime shifts and emergent behavior. Managing resources to favor native species over invasive species under climate change
- Increasing ecosystem resilience
- Agricultural vulnerabilities under climate change

Suggested Topic Areas for NCEAS Solicitation

The integration of social sciences with biophysical sciences

Examples might include:

- Economic (or non-economic) valuation of global change impacts
- Differences in regional responses to climate change
- Comparisons of the costs of action or inaction

Suggested Topic Areas for NCEAS Solicitation

Performance requirements and Indicators for Global Change Observations

- Indicators that track changing environmental conditions, vulnerability, and adaptive capacity at local to international scales to inform global-change-related adaptation and mitigation decisions.
- Identification of monitoring variables and what metrics of risk are most useful, for developing robust iterative approaches to climate and global change?
- Identification of indicators to quantify, track, and, ultimately, enhance the adaptive capacity of ecosystems, places, human communities, and socioeconomic sectors in the face of global change?