

# Engagement 2.0: increasing our collective impact

Flooding in Louisiana, severe heat in the Northeast, intense wildfires in the West – this summer's series of complex, extreme, climate-related events illustrate how climate change affects people. The models used to study and forecast such events exemplify how science can inform society. But the degree to which science can benefit society depends on the degree to which its findings are relevant for, available to, and understood by decision makers and the general public. In this time of unprecedented environmental challenges, environmental scientists need to work with those outside our community to identify and develop commensurate solutions.

Engagement with the public goes beyond communication and education; it encompasses exchanges of information between scientists and community groups, participation of citizens in data collection, and co-development of projects. As ESA members and representatives from the first cohort of Public Engagement Fellows in the American Association for the Advancement of Science's (AAAS's) Leshner Leadership Institute (<https://www.aaas.org/pes>), we care deeply about the environmental consequences of climate change and believe that we must collaborate with the public to develop solutions. In addition to documenting ecosystem changes, researchers need to identify and support the implementation of long-term solutions to climate impacts – and this transition will require broad public involvement.

Ecologists at any career stage have many opportunities to inform and influence societal choices. Some researchers start by developing a social media presence – by blogging, tweeting, or engaging through Facebook. Do your results identify problems with existing laws, policies, or local practices? Consider working with government agencies or NGOs to share your findings with decision makers or community groups. Your mentors and colleagues, as well as staff from your professional societies, may be able to provide introductions and guidance, and many universities have government relations and communications offices that can also help you connect.

Engagement is most successful within trusted, established relationships. From the start of your career, you can reach out to journalists, policy makers, and other community members to share relevant new results or papers. Between these opportunities, keep in touch and respond to their requests for information. Build trust by listening to the needs of stakeholders before presenting ideas – their needs usually differ from those of researchers. By listening, you can understand the broader pressures and effects on environmental systems, increasing the potential impact of your research.

In later career stages, you can broaden the scope of your engagement: exploring how to reach a broader range of audience types that extends beyond your immediate disciplinary area. If you haven't already, you can learn how to write effective op-ed pieces or even pen a popular book. These activities can provide access to new and different venues to broaden the reach of your science.

While individual engagement activities are vital, complex environmental problems require a larger, concerted effort to achieve substantial changes. We call this Engagement 2.0, and envision it as a way to amplify our individual voices through collective, sustained public engagement. Jointly we can build a more dynamic role for ecologists in decision making and public discourse about the management of our interlinked communities and ecosystems. Many universities, for example, have centers and institutes where scholars across disciplines gather to address environmental issues and get support for engagement activities. We need more of these units, and we need to remind university leadership of their value in addressing global challenges. Professional societies can also help to develop networks of and build the capacity of engaged scientists. Some scientific societies are stepping up to this role, including ESA (eg the Public Affairs program; [http://esa.org/ar\\_14\\_15/programs/public-affairs](http://esa.org/ar_14_15/programs/public-affairs)), the American Geophysical Union (eg the Thriving Earth Exchange; <http://thrivingearthexchange.org>), and AAAS. There is potential and need to scale up these models, for instance by facilitating widespread training in science communication, policy, and other engagement activities.

The events of this summer have given us a taste of the future consequences of climate change; complex environmental challenges demand agility and innovation from our community. Universities and scientific organizations must find new models to build capacity and support researchers who work with stakeholders, policy makers, and the public. Success will breed success: disseminating and promoting successful models of engaged environmental scholars can provide optimism, guidance, and insights for those who are interested in getting involved. We encourage you to join us over the next year in starting or expanding your public engagement. Together we can increase the impact of ecology. #EngageESA



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