I always found the most interesting questions between the academic silos. As I moved between disciplines in undergrad and continued to do so in graduate school, no one quite seemed to know what to do with me, but I knew; I wanted to solve problems. And, the problems I encountered in my science were not going to be solved with more data, more information, or more results; they required moving into the realm of rules, regulations, and decisions…hence, I jumped whole-heartedly into policy.—Sarah Anderson, Policy Section Chair 2017–2018.

I was not aware that science policy was a way to actually have my field research contribute to helping people and society via legislative action until 8 years after completing my PhD. Professional development for a career in science policy was not available in my graduate school, so it took me a little while to get to where I am today. It has been a journey that has opened my eyes to so many new career paths and possibilities.—Anjali Kumar, Policy Section Chair 2018–2019.
My graduate advisor influenced policy, but only after decades in the field. I wanted to start rather than end my career in science policy.—Caroline Ridley, Policy Section Chair 2019–2020.

I came to graduate school directly from a role with a community land trust. When I started doing academic research on land use change, I’d always ask myself: ‘Would this have helped our town? Our farmers, our conservation goals, our economy, or our schoolkids?’ Most of the time the answer was, right now it doesn’t, but with a little extra effort, it would.—Charlotte Levy, Policy Section Chair-elect.

As ecology graduate students between 2003 and 2018, our experiences varied widely. In earlier years, the policy implications of research were rarely discussed with peers or professors. In more recent years, graduate students have been encouraged to include policy as a major component of their PhD research. Some programs even have training and career development opportunities for science policy post-PhD. Ecologists in the Ecological Society of America (ESA) have moved toward a more holistic understanding of ecology. New member sections within the society were formed, including the Policy Section, that encompass both our human component and the interaction between humans and the environment.

The importance of science policy

Policy is not a common vocabulary word for ecologists, especially those in academic or research institutions. However, science and ecology have long played a vital role in policy and in politics. Vannevar Bush, the first Director of the U.S. Office of Scientific Research and Development (OSRD) created under President Franklin D. Roosevelt, was tasked with overseeing the first national science policy initiatives. The OSRD’s charge was to coordinate scientific research for military purposes during World War II. At the time, Bush stated: “Science has been in the wings. It should be brought to the center of the stage—for in it lies much of our hope for the future” (Bush 1945).

Indeed, at the time of his appointment, Bush noted, “We have no national policy for science. The Government has only begun to utilize science in the nation’s welfare. There is no body within the Government charged with formulating or executing a national science policy. There are no standing committees of the Congress devoted to this important subject.” Bush and his team accomplished their goal and paved the way for the work we do within and beyond the ESA Policy Section.

Today, scientists are found across the government, in federal agencies, as legislative assistants and policy directors in congressional offices, and in the White House. Scientists sit at tables with diplomats, political appointees, and elected officials to help make decisions that affect communities across the nation and around the world. Scientists also sit on federal advisory committees to explain what evidence says about the likely consequences of particular policy options. Scientists working outside of government also engage with and are affected by policy. They routinely comment on proposed federal rules during public comment periods, impacting final rules and regulations. The science infused into these policy processes provides important checks and balances that can lead to revisions in regulations before they become official or lead to later lawsuits if sound science is not properly accounted for during regulation finalization.

Even the least applied, most basic scientific research will be affected by policy through the funding scientists receive to do their work. Until the end of the first World War in 1918, science was mainly
supported by wealthy donors, churches, and student tuition (Kaiser 2011). Today, most research in the United States is supported by a mix of funding from the government, private foundations, industry, nonprofit groups, and universities (Mervis 2017). Which research is funded, and by whom, are policy decisions, and potentially very influential. The federal science budget is guided by the President’s Budget, determined by Congress, and is essentially an annual list of science priorities for the USA. Similar budget decisions at other levels of government, inside NGOs, and within the private sector are guided by values and also make statements about priorities. Collectively, all of these budget and priority decisions are a significant component of policy; money can profoundly affect what research is accomplished and which researchers are supported.

**About the Policy Section**

We serve as an interdisciplinary convener, within ESA, that provides resources (online and in-person) for our members. The two main objectives of the Policy Section are: (1) to create a community of ecologists that work, have worked, and have an interest in working in policy-related positions and (2) to organize symposia, workshops, and events, especially at Annual Meetings, to give ecologists resources to get involved in policy in a way that works for them. We have also created a living database of policy opportunities for ecologists at all career stages (available online). We also work regularly with the ESA Public Affairs Office in Washington, D.C., to facilitate the participation of students in training exercises and one-on-one interactions with policy makers.

Next year will be the 10-year anniversary of the ESA Policy Section, and it has been a transformational decade from where we started. After numerous years and various attempts to establish an ESA section focused beyond the science and more on its application, the Policy Section was formed and had its first business meeting in 2011 at the Austin, Texas Annual Meeting. Richard Pouyat served as the first Chair of the Section. Out of the momentum of the first meeting, the Policy Section proposed its inaugural event for the 2012 Portland, Oregon Annual Meeting, a symposium organized by two then-current AAAS Science & Technology Policy Fellows, Ariana Sutton-Grier, and Melissa Kenney. The symposium focused on individual ESA members and their work at the science policy nexus. The slate of speakers included science policy heavy-hitter Jane Lubchenco, who at the time was serving as the National Oceanic and Atmospheric Administration’s (NOAA) Administrator, as well as other scientists from NOAA, US Forest Service (USFS), the Environmental Protection Agency (EPA), National Resources Defense Council (NRDC), and the Union of Concerned Scientists (UCS). Since that first symposium, the Policy Section has expanded and diversified to provide information in science policy careers, facilitate training, and explore the meeting location as well as provide science policy resources beyond the Annual Meetings.

Science policy can be part of any type of research in every scientific discipline, and including policy in research can help bolster its broader impact. Anecdotally, we have observed that the Policy Section is generally not the first section or chapter that an ESA member signs up for. The first is generally more technical, and the Policy Section is often second or third for members who join multiple sections. This conveys to us that ecologists across disciplines have an interest in expanding the application of their research to include some aspect of science policy.

We operate the Policy Section in a way that ensures it is relevant for all career stages. ESA is a member-driven organization whose success depends on retaining members from student all the way through to
professional and career level. As a measure of the ongoing relevance of the section to its members, we show ongoing recruitment and retention of members, plus increasing membership, especially in the last three years.

**All politics (and policy) is local**

Recently, the Policy Section has led an initiative to bring local policy issues to the ESA Annual Meeting attendees. Our Annual Meetings are in ecologically interesting areas with sticky science policy topics. However, attendees often do not have time to explore where we are that week in August.

Beginning in 2018 in New Orleans, Louisiana, we have held an annual special session on local science policy issues to create shared knowledge of our unique conference location for ESA attendees (Fig. 1). We were able to invite new voices to the ESA Annual Meeting including local educators, and representatives of NGOs and city and regional government, to talk about issues relevant and real to the

![Fig. 1. ESA Policy Section leadership and panelists after our first local science policy issues panel at the 2018 Annual Meeting in New Orleans, LA. From L to R: Dr. Charlotte Levy (University of Massachusetts Boston), Ashley Booth (Louisiana State University), Dr. Astrid Caldas (Union of Concerned Scientists), Dr. Anjali Kumar (U.S. Agency for International Development), Susan Testroet-Bergeron (Barataria-Terrebonne National Estuary Program), and Dr. Caroline Ridley (Environmental Protection Agency).]
people in that area. In New Orleans, our panel was focused on Science Policy Issues in Jean Lafitte National Historic Park and Barataria Preserve. The conversation included topics such as community resettlement due to rising sea levels as a result of climate change, wetland ecology, and conservation of coastal ecosystems. One of the speakers was the Director of a local NGO who was able to attend the Annual Meeting via ESA’s Diversity Award for bringing new voices to the conference. Another one of the speakers was a PhD student from a local university working on the intersection of wetland and flood ecology and policy recommendations along the Louisiana coast.

For the 2019 Annual Meeting in Louisville, Kentucky, the panel focused on linking ecology, decision-making, and community health. Our speakers included diverse perspectives from citizen groups, local government, academia, and the private sector. All were working to tackle the challenge of enfranchising their community in a city with a painful history of environmental injustice. One program we featured was Green Heart Louisville, a consortium that is rigorously studying the impact of green space on air quality and health in urban communities.

For 2020 in Salt Lake City, Utah, we are planning to feature multi-level decision-making that impacts air, water, ecosystems, and recreation in the Wasatch Mountains for the local science policy session. We hope to have either live or recorded panelists from employees of the U.S. Forest Service and staff from local conservation advocacy groups who will discuss the history of Little Cottonwood Canyon, the abandoned mines, and waterways that have been shaped by land use policies.

We are proud of this annual special session on local policy issues. It helps diversify the speakers at the conference and bring in individuals who would not necessarily attend ESA and are not current ESA members. These special sessions have also drawn an extremely diverse audience including undergraduate and graduate students, university professors, and federal scientists. It also works actively toward the section’s long-term goals.

**Achieving our goals**

One of these primary long-term goals is to educate scientists about policy and how they can contribute to the public policy process in small or large ways. To fulfill this goal, we expend considerable effort to hold trainings for ecologists interested in the basics of science policy, especially at the Annual Meeting. We have also developed Policy Section workshops in collaboration with other groups. With ESA’s Public Affairs Office, we codeveloped workshops on how to engage with Congress (Mize et al. 2018), how to engage with policymakers more broadly (Kumar et al. 2019), and about engaging with federal government through the Federal Register and public comment (Marsh and Anderson 2018). We have also collaborated with the Communication and Engagement (C&E) Section to develop a workshop on how to create a one-pager (Hettinger et al. 2018) to use as a tool to more effectively share scientific research to policy-focused audiences, and we are collaborating with the C&E Section on a Science of Science Communication Short Course at the ESA 2020 Annual Meeting. Beyond the Annual Meetings, we have also created a Science Policy 101 workshop to introduce ecologists to the scope of science policy and the opportunities, both large and small. Through all these trainings, we show ecologists how policy can be integrated into every phase of a research project, as well as all the options for engagement and interactions around research.
Finally, we work to communicate the importance of policy to research and the research process. Science policy is equally about getting scientists involved in policy, getting science into policy, and having scientifically informed policymakers. Our work to train ecologists and prepare them to engage with policymakers is part of this effort. In our trainings, we also work to provide a holistic picture of what can be considered science policy and highlight that it is a two-way street between policy and science. Perhaps most importantly, we work to elevate and recognize ecologists who have taken less traditional career paths and now work in policy settings. We have done this through Inspire Sessions (Ridley et al. 2018), Organized Oral Sessions (Anderson et al 2019; Fig. 2), and Workshops at the Annual Meetings. These efforts have the added benefit of illustrating the diversity of careers available to ecologists and emphasize that ecologists do work from basic science to applying science in policy, management, and regulatory settings.

For the 2020 virtual meeting, the Policy Section will be holding a Science Policy 101 workshop, cohosting a virtual networking sessions with other ESA sections and chapters interested in the human
dimensions of ecology, participating in a career panel in the virtual Career Central, and will contribute a talk to an Inspire session titled “Addressing the Challenges of Ecology’s Human Dimensions: The Human Dimensions Collaborative” and we look forward to welcoming you to these sessions!

Engaged ecologists: a vision for the future

As science has become more political, ecologists are being forced to pay attention to how knowledge being created from the scientific method is being used in the world. From laboratory work and field work to implementation, all our research and science concerns and affects people. The more we understand how these elements work together, the more powerful scientists’ voices will be. The Policy Section is an essential element of the expanding definition of who an ecologist is today. This policy-informed identity expands the vision for whom the Society can be a professional home.

Note

1 https://www.esa.org/policy/esa-policy-section/resources/

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