

A review of professional ecological societies' values, mission, and ethics

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Abstract

The rapid decline in Earth's biodiversity poses significant threats to nature and human well-being. Human activities such as land use change, pollution, climate change, invasive species, and overexploitation drive this crisis, endangering millions of species and affecting critical habitats and ecosystems. This study investigates the role of professional ecological societies in addressing the ecological crises.

Professional ecological societies have members that are experts in ecological, environmental, and conservation sciences. They engage in activities such as publishing research in their journals, organizing events, and promoting ecological education and outreach. Because of their leadership in ecology, we argue that these societies have a potentially important role to play in addressing the biodiversity crisis. To understand how societies see themselves in these roles and responsibilities, we reviewed the mission, vision, and codes of ethics of various ecological societies.

Our analysis included a diverse selection of 73 societies from North America, Central and Latin America, Europe, Asia, Oceania, and Africa. We categorized societies by their geographical scope—local, national, or international—and used content analysis to identify their values and principles. Despite focusing on advancing ecological sciences and promoting conservation, many societies did not explicitly state their values or provide guidelines for achieving their missions.

The study highlights the importance of clearly defined values and responsibilities in enhancing the impact of ecological societies by orienting their members' actions. The findings also call for an urgent reflection on the missions and values of ecological societies to better align them with the dire global environmental crises that we are facing.

Keywords

Ecology, values, biodiversity, professional society, code of ethics

1. Introduction

The biodiversity crisis, marked by the rapid decline in the variety and abundance of life on Earth, poses a significant threat to nature and human well-being (IPBES, 2022a). This crisis, driven by human activities such as land use change, pollution, climate change, invasive species, and overexploitation endangers millions of species to the risk of extinction (Mace, 2010; IPBES, 2022a). It also affects critical habitats and ecosystems, which make significant contributions to people and hold diverse values for Indigenous Peoples and Local Communities across the world (IPBES, 2022b).

In this context, we aimed to understand the potential role of professional ecological societies. Professional ecological societies engage in activities such as publishing research, organizing conferences and workshops, and promoting ecological education and outreach. They are composed of expert members who study the natural world and our interactions with it. These members are typically people trained in environmental and conservation sciences, and other professionals working closely with ecosystems. Because of the knowledge and experiences of their members, we believe that ecological societies are thus uniquely positioned to lead efforts in conservation, education, and policy advocacy to address the biodiversity crisis.

To understand the extent of the values and responsibilities promoted and espoused by professional ecological societies, we conducted a review of their published statements of mission, vision, and their codes of ethics.

2. Methods

We reviewed a selection of professional ecological societies, which we defined as an “organized community of ecological scientists, researchers, and practitioners who offer membership and benefits to interested individuals, oriented primarily towards academic research and engagement.” We analyzed societies which had their organization’s mission statements available on their websites, and the review only used translation tools when necessary. Although non-exhaustive, we sought to have balanced geographical representation from the regions of North America, Central and Latin America, Europe, Asia and Oceania, and Africa. The geographical membership of each society was defined as being local, that is, of a specific location, national - that of an individual country, or international - between two or more countries.

Content analysis was used to review the mission statements of the societies to search for stated values and principles that were of significance to the reviewed society. If necessary, online translation tools were used to facilitate translation of statements in countries’ native languages. Codes of ethics, if the society had them, were also identified. These codes of ethics are distinguished from codes of conduct that focus on personal behavior and responsibility during conferences and other events while representing the society. For example, the United Nations World Health Organization (WHO) Code of Ethics describes the ethical standards of conduct expected from all WHO personnel at all times, aiming to promote, enhance, and sustain an enabling and ethical environment leading to trust, transparency, and respect across the Organization (WHO, 2023).

3. Results and Discussion

Our review of 73 professional societies showed that societies were mostly national (i.e. country-based), although a number of them were international (membership and focus spanning more than one country) and local (membership and activities restricted to a portion or region of one country) in their geographical scope and membership. Ecological societies with a large reach and membership include, for example, the Society for Conservation Biology, the Ecological Society of America, and the British Ecological Society.

Across the mission of the ecological societies reviewed, common objectives emerged:

1. Advancing the ecological sciences globally, regionally, and/or locally.
2. Protecting native plants and habitats, promoting biodiversity conservation, and fostering sustainable practices.
3. Facilitating collaboration among ecologists and international policymakers.
4. Enhancing public understanding of environmental challenges and promoting science-based environmental literacy.
5. Promoting ecological research, education, and awareness through publications and other events in specific regions or countries.

The mission of most international ecological societies is, however, specific to different fields of ecology. These ecological fields include landscape ecology (International Association for Landscape Ecology), restoration ecology (Society for Ecological Restoration), vegetation science (International Association for Vegetation Science), and conservation biology (Society for Conservation Biology). Other international ecological societies such as the International Association for Ecology and the Nordic Society Oikos are umbrella societies with a mission to serve the goals of other local and national ecological societies. Some national societies served by the Nordic Society Oikos (i.e. those in Scandinavian countries) even share their mission statements.

Across most countries, the missions of national societies broadly focus on advancing ecological sciences. The mission of some ecological societies, such as those in East Africa, are broadly focused on biodiversity conservation and sustainable natural resource management, while that of Israel is centered on using ecology and environmental science to advance innovation and interdisciplinary research. Some countries have additional ecological societies with missions that address other sub-disciplines related to ecology and environmental sciences, such as botany, ethnoecology, socio-ecology and environmental social sciences.

Integrity, diversity, innovation, partnership, and respect were mentioned among the societies that shared stated values and/or principles in their mission. However, most ecological societies did not state explicit values or principles in their mission and vision statements (Table 1). Values have a wide range of definitions, but are generally thought of as principles, standards, virtues and social norms 'owned' by individuals, groups and societies (Petrova et al., 2006). Rather than seeking to define these terms explicitly, we reviewed how societies identified them (Full list in Table S1).

Table 1. The number of reviewed societies with mission, values and ethics.

Mission statement and/or objectives	Explicitly stated values, including those with Diversity, Equity and Inclusion (DEI)	Code of ethics, not just conduct
73	27 (37%)	12 (16%)

As an example, the International Society of Ethnobiology declares its fundamental value that is the basis of its Code of Ethics is mindfulness, which they defined as “a continual willingness to evaluate one’s own understandings, actions, and responsibilities to others” (ISE, 2008). Values such as innovation, excellence and boldness are important to ecological societies whose missions are to promote sustainable development and provide solutions to environmental challenges. These societies include the British Ecological Society, Ecological Society of China, East African Wildlife Society, and Wildlife and Environment Society of South Africa. Policy-relevance is valued by the Society of Ecological Restoration and is linked to its mission of advancing the science, practice, and policy of ecological restoration. Although most societies did not explicitly articulate a set of values for their members, many societies indicated implicit values in codes of conduct, or in a stated commitment towards diversity, equity, inclusion, and justice.

Despite most societies having a mission and values aiming to improve ecology as science, not as many aimed to inform conservation and sustainable practices, and very few of them provide guidelines to their members about how that can be achieved through codes of ethics or similar documents. Among the ecological societies, a notable exception was the *Sociedade Portuguesa de Ecologia* (Portuguese Society of Ecology) which has a “deontological document to guide the professional activity of ecologists and their relationship with society” (Wals et al., 2019). Some other societies have codes of ethics mentioning values, but most of them focus on regulating the interactions among researchers or professionals, as teachers, with traditional and local communities. Only one society appears to consider communicators. Other roles of ecologists, like decision- and policy-makers, were not mentioned.

We found that codes of ethics can provide clear ways to connect and explain the professional society’s goals and the members’ responsibilities. In general, we noticed that societies of practitioners tended to have codes of ethics and statements of responsibilities more frequently than research-oriented ones, with a strong emphasis on the interactions among professionals and, to a lesser extent, of professionals with the public. Some topics like the importance of acknowledging personal biases and recognizing the complex and dynamic nature of science are seldom addressed. Several societies do have codes of conduct, but in contrast to codes of ethics, these are typically rules that pertain to members’ short-term behaviors, particularly in meetings and conferences; however, they do not necessarily speak to the societies’ goals in terms of research and sustainability.

Several international standards that can be applied to ecologists and their research were found in the process of the review. These include the UNESCO Open Science framework, which seeks to make science more accessible, inclusive and equitable for the benefit of all (UNESCO, 2022). UNESCO also created official recommendations on Science and Scientific Researchers, which include, among other themes, the rights and responsibilities in research (UNESCO, 2017). There are also approaches within the ecological community on integrating and discussing different ethical approaches, like Land Ethics (Leopold [REF]) or how to bring Ethics of Care to ecology (Jax et al., 2018), reflecting part of a rich and ongoing conversation within the ecological research community.

Other frameworks such as the Singapore Statement on Research Integrity (Resnik & Shamoo, 2011) and Data Findability, Accessibility, Interoperability, and Reusability (FAIR, Wilkinson et al., 2016) are broadly related to the practice of research and data management rather than societal responsibilities. They are useful guidelines on common standards that scientists from any field should maintain to uphold the quality of their work and engagements.

Ecological societies could also learn from the experiences that other professionals gain while developing their codes of ethics, such as physicians (Parsa-Parsi, 2022), engineers (WFEO, 2023), or nurses (ICN, 2021). Different communities of professionals could provide insight into this process and interlinkages between them. For instance, the environment is often considered in engineer codes (see Bielefeldt, 2018), but the manner of this inclusion may be distinct to that of the ecological sciences. The experience gained by these professions in how to translate these codes of ethics into practical tools to support daily professional decisions that can be used to improve global sustainability could be valuable to ecological societies.

4. Conclusions

Ecologists are well-informed professionals whose roles and responsibilities are closely aligned with the scientific study of biodiversity, species, ecosystems, and the dynamics of the natural world. Our review of professional ecological societies shows that while many mission statements of ecological societies reflect objectives that relate to our common care of our planet and the life in it, many

societies have not defined what values, principles, and ethics drive their purpose as a society, and also not for their members as individuals. These gaps limit the discussion on how professional ecological societies view the roles and responsibilities of professional ecologists in this time of ecological crises.

While we sought to make this review reasonably comprehensive and geographically representative, we invite all professional ecological societies to reflect upon their mission, values, and ethics in pursuit of the protection of our natural world, and our roles and responsibilities in the just social-ecological transformation we need.

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