














PERSPECTIVE

Strengthening responsibilities to face global crises: A call to ecologists, environmental scientists and their societies

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Handling Editor: Truly Santika**Abstract**

1. Despite research and outreach efforts by ecologists and environmental scientists (EES), environmental crises continue to escalate.
2. As a diverse group of concerned EES, we perceived a lack of clear guidance to articulate individual actions to improve sustainability. To address that gap, we propose 'The Conguillío Statement on the values and responsibilities of ecologists', a document summarizing values and responsibilities for EES in their different roles.
3. Scientific and professional societies are fundamental institutions for the development and sharing of such guidelines across the many roles that EES take on.
4. With the ongoing convergence of several crises, EES societies must take the lead to develop and disseminate contextualized and appropriate guidelines to their members. The 'Conguillío Statement' can stimulate that debate.
5. We call on EES and their professional societies to take the lead on the effort to debate, adapt and adopt guidelines to inform EES practice towards a more sustainable future.

KEYWORDS

ecologists, environmental scientists, ethics of care, professional roles, professional societies, sustainability, values

For affiliations refer to page 6.

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1 | INTRODUCTION

For more than a century, professionals across several disciplines—including geography, biology, forestry, ecology, conservation and more—have documented and communicated the environmental crises that threaten the survival and well-being of many species, including humans (IPBES, 2019). These professionals (hereafter ecologists and environmental scientists, EES) are also starting to recognize and value the knowledge and experience of Indigenous Peoples and local communities in protecting biodiversity. Yet, despite EES efforts to understand these crises, and create and communicate solutions to address them, they continue to escalate (IPBES, 2019). Time is long overdue for EES to play more prominent and impactful roles in society, guiding and supporting decisions compatible with the survival and well-being of nature and people and, ultimately, enabling a societal transformation of values and goals (Gardner et al., 2021; Gregory et al., 2024; Meadows, 1999). There are many documents (e.g. Transformative Change Report: IPBES, 2024), platforms (Earth Charter: earthcharter.org), tools (e.g. structured decision-making, Hemming et al., 2022) and principles (e.g. Australian guidelines to work with Indigenous groups: Woodward et al., 2020) that can be helpful. Yet, from the perspective of individual EES acting within different roles and facing multiple pressures and large uncertainty, the cacophony of calls to action and ways to act does not provide clarity. As a result, most EES lack clear guidance to act in a way such that their local actions have an overall positive impact both locally and globally, especially in light of conflicting societal priorities (e.g. economic growth to support short-term human well-being vs. protecting nature to sustain people long-term; Cardou & Vellend, 2023). Some EES professional societies have created guiding principles for some aspects of the profession, but—to our knowledge—none considers the variety of roles that EES play (Ortiz et al., 2024).

Individually, EES act as researchers, practitioners, educators, policy- and decision-makers, communicators, advocates, activists or combinations of these roles. In their professional daily activities, EES can take at least three non-mutually exclusive paths to increase their impact when addressing environmental problems: (1) assume more of these aforementioned roles, (2) act more responsibly within each role or (3) align actions across roles to address environmental problems. The decision on which paths to take depends on personal values, awareness, opportunities and context. Acting more responsibly and improving the alignment across roles require guidelines to clarify and improve how we exercise our profession. Professional societies, ranging from engineering to nursing, provide these guidelines, often articulated in mission, values and ethics statements highlighting how their members can align and act responsibly (see [Table S2](#)).

We see an opportunity for professional societies that represent EES to provide guidelines to their members on how to achieve more transformative impacts. As a group of early-, mid- and senior-career EES researchers and practitioners from 14 countries and five continents working in environmental fields such as ecology, conservation, forestry, sociology, policy and other related social sciences

and humanities, we agreed that such guidelines were missing. Initial conversations at a workshop in Chile (Yannelli et al., 2025) spurred an exploration of our values, roles and responsibilities as EES. These initial conversations were complemented with a review aimed to assess the prevalence of EES guidelines (Ortiz et al., 2024). Here, we first present the findings of the review that supports our initial perception. We also briefly discuss complementary sources of information. Then, we present the outcomes of our internal discussion on values, roles and responsibilities as EES. Despite the diversity of our group, we do not represent all EES and their social–ecological contexts. Hence, we call on EES societies and individuals to develop and implement their own guidelines—whether opting or not to build upon our suggestions—as tools to better face the current environmental crises.

2 | LOOKING FROM THE INSIDE: THE ROLE OF EES SOCIETIES AND THEIR MEMBERS

To understand the extent of the values and responsibilities promoted by professional EES societies, we explored online materials on the webpages of 73 academic societies (across 42 countries and 19 international ones), reviewing their discipline, missions, visions and codes of ethics (see [Table S1](#)). Values are generally thought of as principles, standards, virtues and social norms owned by individuals, groups and societies (Petrova et al., 2006). We considered societies as organized communities of EES that offer membership and benefits to interested individuals, primarily oriented towards academic research and engagement. Although non-exhaustive, we generated this list from the regions: Asia, Africa, South America, North America, Oceania and Europe; we also included global associations. We reviewed societies with publicly available documents, using Google Translate to translate materials into English in six cases (8%). Because our focus was on values and responsibilities in EES professional roles, we did not consider codes of conduct focusing on personal behaviour and responsibility during conferences and other events.

Most societies' missions broadly focused on advancing ecological and environmental sciences and their practices ([Table S1](#)). Nevertheless, 42 (58%) societies explicitly stated that biodiversity conservation, sustainable natural resource management or other forms of improving sustainability were also part of their mission or mandate. Another 12 (16%) societies considered communication with society at large as a critical role (the purpose of that communication was not always specified). Integrity, diversity, innovation, partnership and respect—principles often associated with research—were often mentioned by the societies that stated institutional values or principles in their mission statement. These were often defined as being the values of the societies, not necessarily presented as capturing the values of the professionals the societies represent. Because the values of individuals and those of the societies in which they participate do not necessarily overlap, we explored if societies

provide guidelines for their members. Only 13 (18%) societies had codes of ethics or similar documents. The absence of explicit statements of values and responsibilities for individuals in many professional societies can result in disjointed approaches to environmental crises. We posit that by establishing clear and comprehensive guidelines, EES members could move beyond fragmented, individual approaches, enabling more coordinated and aligned efforts that significantly enhance progress towards a sustainable future.

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). We found the document inspiring in its scope and motivation, but believe that clarifying the connection between the responsibilities identified in the document and the specific roles that individual EES can take may help EES to adopt those responsibilities. Other societies have codes of ethics mentioning values, but most focus on regulating interactions between researchers or professionals and Indigenous and local communities and as teachers. Only the American Society of Naturalists considered the roles of EES specifically as communicators, that is when interacting with the public. Other roles of EES, like decision and policymakers, were not mentioned. Some topics were seldom addressed, like acknowledging personal biases and recognizing science's complex and dynamic nature. We observed that societies serving practitioners adopted codes of ethics and statements of responsibilities more frequently than research-oriented ones, with a strong emphasis on interactions with other professionals and communities.

3 | LOOKING OUTSIDE: OTHER FRAMEWORKS

We believe that EES societies could find inspiration in the rich experience of other professions. First, other professional societies, for example those representing physicians, nurses, engineers and journalists, have developed codes and guidelines to guide their members in their different roles and interactions (see Table S2), developing training strategies and finding mechanisms to balance different principles when decisions put them in conflict.

Second, documents and initiatives exist that aim to improve research by making it more transparent and relevant for society, providing valuable guidelines on common standards that scientists should uphold to improve the quality of their work. For instance, UNESCO has developed at least two research-oriented sets of guidelines: there are calls for ethical research, open science and standards to support data sharing and management and the rights of Indigenous Peoples. Furthermore, ample literature exists on the role of scientists in research and education for socially responsible science (e.g. Bird, 2014).

Third, this debate is not new: well before the scientific method was formalized centuries ago, humans philosophized about their roles and place in their relationship with nature. This practice persists

in various debates, highlighting the importance that EES place on interacting with nature. Reviewing these multiple philosophical frameworks that deliberate on how society should interact with nature is beyond our scope and goal; however, our review shows that these debates are active and enriching and could empower EES in their efforts to tackle global environmental crises.

4 | FROM A COLLECTIVE GOAL TO VALUES AND RESPONSIBILITIES: THE CONGUILLÍO STATEMENT

Given the urgency, importance and magnitude of current environmental crises, we argue that EES societies ought to drive the initiative for shared guidelines. These societies should identify responsibilities and the values that underpin them that, when honoured, will enhance sustainability. To catalyse that conversation, we share 'The Conguillío Statement' (Arnillas et al., 2024), an open source coherent framework composed of a collective goal and shared values and responsibilities for the main roles that EES play in their professions and in society at large. The idea originated in the context of a 4-day 'ANDiNA' workshop (Yannelli et al., 2025). Our discussions used deliberative techniques to help identify our values and responsibilities and those of our institutions and to build consensus. Our initial ideas were reviewed, enriched and reorganized using 'Conversation Cafe' and 'Open Space Technology' facilitation tools and regular walks in nature to provide internal coherence (Yannelli et al., 2025). We then sought to integrate different perspectives from other societies (based on the review described above), ethical frameworks and fellow EES.

The Conguillío Statement proposes that EES have the collective goal of taking care of Nature (Figure 1), considering a broad definition of Nature that encompasses all social-ecological systems. Hereafter, we capitalize Nature when highlighting this encompassing definition that includes humans. In general terms, 'caring' are the activities 'that we do to maintain, continue, and repair our 'world' so that we can live in it as well as possible' (Fisher & Tronto, 1990). All communities need 'caring', but not all members of a community engage in caring in similar ways or positions (Fisher & Tronto, 1990). As such, caring occurs in asymmetric relationships, like the relationship between a nurse and a patient. For caring to be effective, the care givers must be able to recognize the needs of the care receivers, be willing to respond to those needs, competently implement the actions that provide the care, respond to the way the care receiver reacts and organize with others to provide care (Tronto, 2015). This framework of care can be extended to the relationship with Nature. Humans have always benefited from Nature's care, even when seldom acknowledged, in the form of nature's many contributions to our collective well-being (IPBES, 2024). The Conguillío Statement aims for a more reciprocal care, one that seeks to improve human-nature relationships by actively caring for Nature. This aligns with calls to foreground stewardship and relational values as a pathway towards transformative change (e.g. IPBES, 2024; Ojeda et al., 2022).

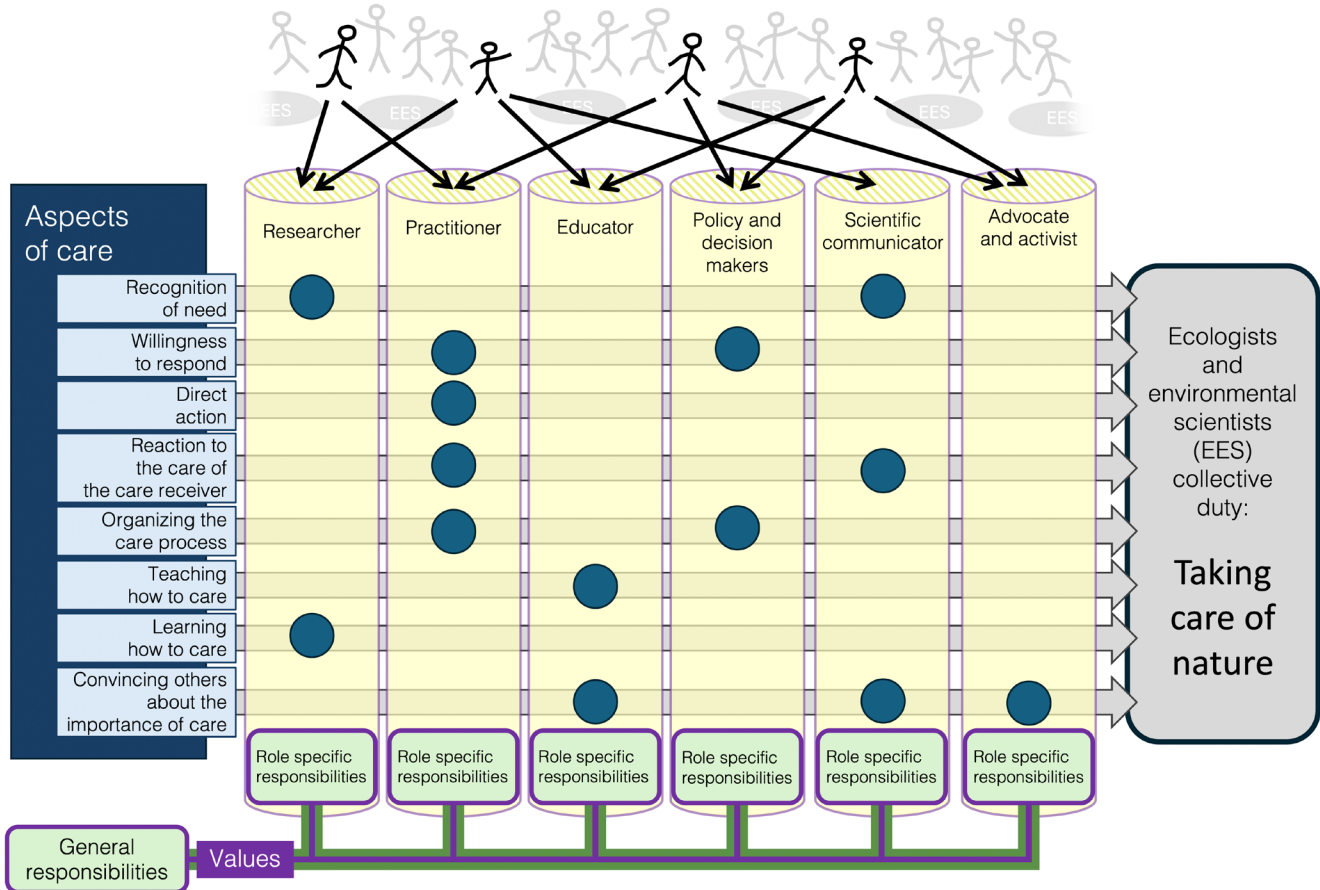


FIGURE 1 Taking care of Nature (grey box on the right) is a complex task with multiple aspects (detailed in the blue boxes on the left). Each of the eight aspects identified here is addressed by individual ecologists and environmental scientists (EES, represented by the people at the top) when they assume different combinations of the six roles (yellow cylinders). To fulfill EES collective duty, each EES in each role can commit to general and role-specific responsibilities (green boxes at the bottom). The shared values (purple lines) underpin and provide coherence to these responsibilities. The circles in the middle indicate the main aspects of care that are associated with each one of the roles. We present four hypothetical EES, from left to right: A watershed manager doing research to support an adaptive management framework; a university professor engaged in outreach; a consultant, who often engages in environmental demonstrations and is invited to a government committee; and a retired geographer and community leader who also teaches at a local high school.

Convincing others about the importance of caring for Nature becomes a unique challenge because ecosystems are complex, dynamic and beyond the scale of any individual EES. Additionally, training the next generation of EES to find and crystallize ways to care for Nature becomes very complex, requiring specialization. Each EES role is accountable for different aspects of care which therefore translates into different responsibilities. To help articulate these responsibilities coherently within and across roles, The Conguillio Statement identifies underlying core values. Importantly, this statement was written keeping in mind the critical position of Indigenous and local communities as key actors, and how EES should interact with them.

EES can play a fundamental part in bringing transformative change to the world (IPBES, 2024) through the variety of roles and approaches available to them. These include, for example, co-creation of knowledge in collaboration with other sectors of society at large (e.g. as researchers), improving the practices, rules and norms of their institutions (e.g. as practitioners and policy- and decision-makers), empowering marginalized groups (e.g. as communicators

and educators), partnering with Indigenous and local communities to create systemic change towards more sustainable human–nature relationships (e.g. as advocates and activists). All roles require an alignment of values and actions (IPBES, 2024, chapter 3). We acknowledge that in all of these roles, EES also face challenges and barriers that hinder their agency in advancing transformative change. Detaching decision processes from the natural systems and people they affect is one of many systemic and structural barriers; such detachment is often exacerbated by colonial relations of domination, world-views leading to extractivist human–nature relationships or policies shaped by wealth and power imbalances (IPBES, 2024, chapter 4). Such barriers can be especially difficult to address by EES from marginalized groups or politically repressive regions where speaking up against systemic issues can be penalized. These types of local contexts highlight the need for locally drafted guidelines. For example, local legislation, power dynamics and decision-making processes will determine the correct leverage points to address (Meadows, 1999). We emphasize that the process of developing guidelines should be

TABLE 1 Different ways in which statements of values and responsibilities can strengthen the practices of individual EES towards being more impactful, using The Conguillío Statement as an example. We found some scenarios that EES face, aligned it with an EES role and found some responsibilities suggested in The Conguillío Statement particularly relevant for that scenario. The core values of curiosity about ecosystems, empathy with all beings, intellectual humility, integrity and responsibility, competence and academic rigour and inclusivity inform the implementation of these responsibilities in all scenarios.

Scenario	Key role	Examples of responsibilities
Designing a new research project	Researcher	Acknowledge that our context, backgrounds, identities, assumptions and opinions influence our work and decisions. Consider the well-being of future generations. Consider how it could affect local communities, collaborating with them as much as possible.
Confronting and reducing the overinterpretation of data	Researcher	Make data and methods transparent and available. Declaring and discussing any possible biases or weaknesses. Documenting and communicating clearly about uncertainties and present alternative interpretations. Be clear about speculations and avoid unfounded claims.
Communication with a reluctant audience	Communicator	Involve relevant communities in designing the communication strategy. Build a multidirectional dialogue, understand concerns or targets and develop mutual trust. Consider the social impacts of the message.
A community approaches EES looking for help to address an environmental issue	Practitioner	Aim for improved interconnection between society and ecosystems. Make recommendations and design projects and methodologies based on the best available evidence, including scientific, traditional and local knowledge. Consider and communicate uncertainties.
EES identify a transformative potential to improve the quality of life of a local community	Practitioner	Ground proposal within the framework of social and environmental justice. Integrate environmental sustainability principles in each project, considering implications over different time frames. Acknowledge that our context, backgrounds, identities, assumptions and opinions influence us. Participate, engage and foster inter- and transdisciplinary collaborations.
Conflicting management recommendations	Decision-maker	Aim for improved interconnection between society and ecosystems. Acknowledge and document uncertainty. Involve all relevant actors in the decision process. Make all decisions as transparent as possible.
Selecting research projects to be funded	Decision-maker	Consider that we are representing nature's and society's interests. Include sustainability principles. Acknowledge that our context, backgrounds, identities, assumptions and opinions influence our work and decisions. Foster inter- and transdisciplinary collaborations, including with local and Indigenous communities.

context-specific in order to ensure inclusive participation: where an annual meeting of a national organization might be the appropriate venue in one context, a more informal and local process could be more inclusive in another.

The Conguillío Statement described here is a working document, something that we hope will be used by EES to inform local discussions to generate statements adapted to their context and integrating voices and knowledge representative of their place. Experiences from other professions show how well-developed codes of ethics, something in the purview of EES professional societies, can support several aspects of their practice (Table 1). We hope that by re-evaluating their values and actions, EES can enhance their contribution to enable a transition away from relations of extraction and towards relations of care (IPBES, 2024, chapter 5). For instance, local professional societies could use their statements to identify critical

leverage points that can help address the barriers they face, looking for strategies that better align with their values and responsibilities.

5 | FROM STATEMENTS TO ACTIONS

We urgently call on EES societies to drive the identification of shared goals, values and responsibilities. The Conguillío Statement (Arnillas et al., 2024) provides materials to inform these discussions, potentially working as a starting point for each society to develop its statement. The Statement (available in English, German, Portuguese and Spanish) is already facilitating conversations within EES professional societies in Argentina, Brazil, Canada, Chile, the United Kingdom and the United States of America. To share this call and initiate conversations with the professional societies we belong to,

we have conducted workshops at conferences in Brazil (in 2024 at the Reunião da Associação Brasileira de Ciência Ecológica e Conservação), the United Kingdom (in 2024 at the British Ecological Society Annual Meeting), the United States of America (in 2024 at the Annual Meeting of the Ecological Society of America) and Argentina (in 2025 at the I Reunión Trinacional de Ecología, including EES from Argentina, Chile and Uruguay) with more than 200 participants overall. Workshop participants at all conferences identified taking care of Nature as a core aspect of their professional values. We also found that EES are motivated to find strategies to align these values and responsibilities with their actions, acknowledging that this is a first step for transformative action. Furthermore, participants generally agreed with our assessment that shared values and responsibilities offer guidelines that can align and harmonize individual actions and decisions towards a collective goal (e.g. see Martin et al., *n.d.*). Each workshop had different goals and dynamics, reflecting local interests and motivations, highlighting the importance of local discussions to engage EES.

We hope this call will inspire EES to participate in this reflection, shaping their professional societies' values and responsibilities and ultimately transferring these discussions to statements that can influence their practice. The discussion process could benefit from integrating and learning from platforms such as IPBES and the Earth Charter. Moreover, the interaction between local EES societies and global initiatives can help translate the global lessons into practice, with societies helping to promote and align the guidelines. Societies should communicate their guidelines to current and future EES by establishing solid communication channels through a variety of avenues including universities, annual meetings, journals, member listservs and events they sponsor. Clear and strong statements of values and responsibilities supported by professional societies could also help to support EES when facing external pressure when they act on these values.

An important challenge ahead is how to address the different perspectives across the large variety of EES roles. These roles may carry different missions, particularly in contentious areas such as biodiversity offsetting, large infrastructure projects for energy transition or invasive species control (Cardou & Vellend, 2023). The Conguillío Statement acknowledges this complexity and proposes core values such as inclusivity, integrity, empathy and responsibility. By aligning actions with these values, EES can foster coherence across roles without suppressing diversity of perspectives and strategies for all. There are no easy answers but formalizing values and responsibilities that all EES support provides a starting point to facilitate complex conversations.

'Business as usual' is no longer acceptable in a time of global climate and biodiversity crises. We, as individual EES, along with our professional societies, must work towards being more impactful in the various roles we play in our daily work, thinking as a collective even when we act individually, to align our actions towards our common duty of taking care of Nature. Reflecting on EES roles and responsibilities, communicating them and translating them into actions are powerful next steps towards a more sustainable future.

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The conceptualization and initial ideas for this initiative were collectively developed during the ANDINA 2024 workshop by (alphabetically) Carlos Alberto Arnillas, Anni Arponen, Marc W. Cadotte, Javiera Beatriz Chinga Chamorro, Mariana C. Chiuffo, Sharon K. Collinge, Roger Cousens, Kadambari Devarajan, Ken Ehrlich, Marilyn Grell-Brisk, Lesley Hughes, Rebecca W. Kariuki, Heather M. Kharouba, Alexandra-Maria Klein, Tara G. Martin, Hazel Norman, Andrea Monica D. Ortiz, Ana Carolina Prado-Valladares, Helen M. Regan, Libby Rumpff, Florian Schnabel, Bruno E. Soares, Gisela C. Stotz, Kristiina Visakorpi, Michael Williams, Marten Winter and Florencia A. Yannelli. Carlos Alberto Arnillas, Gisela C. Stotz and Andrea Monica D. Ortiz led the writing of the manuscript, with significant contributions from the other authors. All authors contributed critically to the drafts and gave final approval for publication.

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CONFLICT OF INTEREST STATEMENT

Authors declare that they have no competing interests.

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All data are available in the main text or the [Supporting Information](#).

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SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

Table S1. Review of professional ecological and environmental science societies.

Table S2. A small sample of codes of ethics and related documents created and used by different professions to guide and discuss their responsibilities in different roles.

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