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Meaningfully engaging the next generation of ecosystem services specialists

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ABSTRACT

The Ecosystem Services community needs to think carefully about how to develop and engage the next generation of leaders. Entering the field presents both challenges and rewards for early-career specialists (ECS). In this commentary, we provide recommendations for meaningful engagement of ECS in an effort to grow and broaden the value of ecosystem services as a framework for sustainability.

1. Commentary

As the field of ecosystem services (ES) continues to grow, novel opportunities abound to engage with diverse disciplines (Bennett, 2017; van Riper et al., 2017), social justice issues (Dawson et al., 2018; Schröter et al., 2017), and emerging paradigms, such as nature's contributions to people (Peterson et al., 2018), relational values (Himes and Muraca, 2018), and shared values (Irvine et al., 2016). Particularly, the ES field must usher in a new generation of scholars, practitioners, and policymakers who are beginning their careers. Harnessing the next generation of specialists' new perspectives, strengths, and ambitions presents challenges and opportunities for the ES community (Lim et al., 2017). Our team of 14 Early-Career Specialists (ECS) explores these risks and rewards, followed by recommendations for enhancing engagement and advancement of future ES leaders and experts.

Despite ES's wide adoption as a sustainability framework, the field still struggles to embrace diverse perspectives (Peterson et al., 2018); we argue that this shortcoming extends to engaging ECS. In this community where founding members are still actively involved, finding a niche as a newcomer, where one can elevate his/her voice and contribute to theory and practice, can be difficult. Additionally, while calls for greater interdisciplinarity and community-engaged research may be critical to the uptake of ES for decision-making (Bennett, 2017; Costanza et al., 2017), this route can be risky because of inadequate institutional (political and social) support, especially for those early in their careers (Dooling et al., 2017; Hein et al., 2018). These barriers, in conjunction with the common financial and mental stress associated with postsecondary education in science and academia (Belluz, 2016), may outweigh the benefits for future experts, limiting the influx of new talent and capacity (Rhoten and Parker, 2004).

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The world must “mobilize all of its talents” to solve global sustainability challenges, (Brück et al., 2010), and ECS have the potential to lead ES in new, exciting directions. Many ECS exhibit a strong interest in social justice and real-world problem solving, and seek to broaden the impact of ES on societal and ecological decisions, policies, and practices (Rhoten and Parker, 2004). Our exposure to diverse cultures, values, experiences, and epistemologies, alongside our familiarity with emerging communication and engagement technologies, provides us with the skills to bridge diverse disciplines, stakeholders, and sectors (Costanza et al., 2017; Lambini and Heubach, 2017). Moreover, ECS already produce high-quality, innovative science (Ebadi and Schiffauerova, 2016). One initiative already recognizing and building on this potential is the Young Ecosystem Services Specialists (YESS) network (Böhnke-Henrichs et al., 2014). Since 2011, YESS has expanded to over 420 members worldwide and has hosted engagement-driven sessions at multiple conferences, along with facilitating a multitude of ongoing capacity-building activities (e.g., Bull et al., 2016).

Given these benefits, we argue that further investment in ECS’ professional development and inclusion will strengthen the field’s continuity and longevity, as well as enhance the use of ES in global conservation and sustainable development efforts. To this end, we present several actions that we consider critical stepping stones for meaningfully engaging the next generation:

- **Remove barriers for engagement:** Several opportunities exist within the ES community to increase equitable participation of ECS. We encourage all ES events and conferences to offer reduced rates for attendees five years or fewer post-graduate degree. We also propose establishing a research fund for ECS that could serve as a platform for showcasing innovative ideas (e.g., NSF CAREER and ESIP FUNDING Friday). ES journals can reduce fees and expand opportunities for ECS, such as across-career special issues or present-to-publish programs (The Editors, 2019). The ES community also should continue to promote interdisciplinary work by increasing coverage in related journals and by advocating for academic institutions to recognize and reward community and policy-level contributions (e.g., the San Francisco Declaration on Research Assessment, 2013). Further, some early career-specific funding could be prioritized towards interdisciplinary work.
- **Create direct, long-term mentoring and networking programs:** Professional societies like ACES and ESP play a key role in providing networking opportunities, which pave the way for future job and collaboration opportunities (Ansmann et al., 2014; Daily, 1999). We encourage growing mentor and network programs, particularly for community members in developing countries (Dike et al., 2018). Conference fellowships, like ACES program for graduate students, are extremely valuable, and we encourage expanding such opportunities further to cover multiple experiences (e.g., the IPBES Fellowship Programme) and more directly facilitate networking between early career attendees and established professionals, for example, through reverse mentoring (Morris, 2017).
- **Extend leadership positions:** We recommend that ES advisory and journal boards, science-policy initiatives, and event committees create permanent positions for ECS. For conferences, we recommend recruiting ECS to serve on the planning committee and to help develop activities specifically geared toward early career attendees. Further, we advocate future conferences mandate all activities feature diverse representation, to include ECS and local ES experts or practitioners.
- **Increase learning opportunities:** Recognizing many educational and training opportunities already exist, the ES community should evaluate potential areas of need and draw from other fields to guide future development of interdisciplinary courses, programs, and standards (Gustafsson, 2018; Welch-Devine et al., 2014). For instance, developing introductory-level modules for all ages—elementary through university—could introduce a wider range of

students to the science and practice of ES. We highly encourage the development and expansion of formal trainings offered by ES organizations and experts, as well as more informal resources like those listed by ESP. In particular, we envision creating an immersive workshop that regularly brings together ECS and established leaders to allow mutual learning through discussion of the field’s key ideas, techniques, and needs.

Together, these actions lay out a progressive strategy for meaningfully engaging and developing ECS in ES. Being early in our careers, we want to ensure our chosen field thrives, and believe a high investment in emerging experts now will yield high returns for the future planet and human well-being. We hope these ideas will advance ongoing efforts to promote an inclusive ES community that welcomes and embraces diverse perspectives.

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Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.ecoser.2019.101041>.

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