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symposium summary: Re-imagining conservation goals in light of global change

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## symposium summary

## Re-imagining conservation goals in light of global change

Ecological Society of America 2<sup>nd</sup> Emerging Issues Conference: Developing ecologically based conservation targets under global change – Shepherdstown WV, USA, 27<sup>th</sup> February–1<sup>st</sup> March 2012

This February, the Ecological Society of America convened the second conference in its Emerging Issues conference series, “Developing Ecologically Based Conservation Targets under Global Change.” A diverse group of 70 researchers and land managers from over 40 NGOs, government agencies, and universities, met at the National Conservation Training Center in Shepherdstown, West Virginia, for two days of presentations and two days of workshop discussions on the future of conservation. The conference, chaired by Dov Sax (Brown University, IBS founding member) and Bernd Blossey (Cornell University), was organized with the objective of developing tools for those charged with implementing conservation throughout North America and internationally. A premise was that protected areas may not be enough to ensure species’ survival in a rapidly changing world. The keynote was delivered by Gabriela Chavarria, Science Advisor to the Director for the U.S. Fish and Wildlife Service, who addressed Department of Interior initiatives to develop science-based management practices and coordinate activities across entities.

Richard Hobbs of the University of Western Australia opened the first session, “Protected Areas: Fostering Museums, Way Stations, and Endpoints.” In his talk, “Intervention, protection and restoration: are we guardians or gardeners?” Hobbs asserted that we have entered the Anthropocene, an era in which humans are responsible for broadly affecting the environment. Hobbs stressed that we must embrace “novel ecosystems” and consider ourselves part of the natural world (Hobbs et al. 2006). Steve Jackson of the University of Wyoming then described his paleoecological research on how plant ranges shift with climate. The future is historically contingent, Jackson asserted, but there are countless possible futures that can arise from the present. Nick

Haddad of North Carolina State University presented data on landscape corridors that promote species interactions and dispersal in fragmented landscapes. He suggested that corridors planned for “umbrella species” could ultimately benefit many species. Closing the session, Steve Gaines of the University of California, Santa Barbara, over-viewed the ways in which the small sizes of marine reserves and the large distances between them present challenges in an ever-changing world (Gaines et al. 2010).

The second Symposium, “Preventing Extinctions: Balancing Tradeoffs,” moved the conversation from protected areas to species-specific approaches. Mark Shaffer of the U.S. Fish and Wildlife Service kicked the session off by acknowledging that no single level of government can safeguard both science and society. He asked the provocative question: if the concept of community stability is dead, then can we really protect land in perpetuity? This question was sustained in the discussions of multiple later workshops. Michael Runge of the U.S. Geological Survey described conservation management as a decision problem, not a scientific problem. Ron Swaisgood of the San Diego Zoo made the powerful point that “bad conservation news” must be balanced by empowerment and hope. Swaisgood encouraged scientists to communicate conservation messages optimistically and to get involved in community leadership, outreach, education reform, and citizen science. Ben Minter of Arizona State University presented Aldo Leopold’s land ethic as a viable model for future conservation. And Dov Sax over-viewed the contested question of whether assisted migration (managed relocation) should be viewed as a last resort or as a tenable conservation strategy. Sax argued that doing nothing is not really *doing nothing* if it means passively accepting species extinction, and that assisted migration should be further

1. For updates visit: <http://www.esa.org/emergingissues/conference.php>

explored in a systematic and scientific manner.

Symposium III, “Managing Ecosystem Services: Balancing Utility and Preservation,” continued into day two. Using the example of stream restoration, Margaret Palmer of the University of Maryland discussed how the implementation and interpretation of research changes as funding structures and social interest change. Comprehensive conservation and ecological research must anticipate these political structures. Erle Ellis of the University of Maryland, Baltimore County, took a global view, demonstrating that the vast majority of Earth’s ice-free lands are modified by humans and are multi-functional. Michelle Marvier of Santa Clara University noted that ecosystem services do not always align with biodiversity conservation, and that we must better integrate human needs into conservation planning. In describing the Natural Capital Project, Taylor Ricketts of the University of Vermont noted that scientific research and policy formation are often mismatched in scale, with science requiring time for data collection and publication and certain policy discourses moving at a rapid pace. Ecologists should be aware of the multiple political dimensions of any conservation project. Finally, in a talk titled “The spirit of conservation and the idolatry of management,” Karim-Aly Kassam of Cornell University asked whether there is more to conservation than efficiency and critiqued the language of “conservation targets,” suggesting that “connectedness” and “care” might be better paradigms for the current generation.

Day two concluded with a final symposium, “Management Outside of Protected Areas: Ap-

proaching Alternative Choices.” Paul Armsworth of the University of Tennessee, Knoxville, discussed economic methods with which to approximate actual conservation costs. Gabriela Chavarria discussed a number of Department of the Interior conservation initiatives that link multiple stakeholders and landscapes. Doug Tallamy of the University of Delaware suggested that native plant species often support more diverse insect fauna and that they therefore better promote ecosystem functioning in suburban landscapes. Lisa Shulte-Moore of Iowa State University asked whether we need to “tweak, adapt, or reform” agricultural practices in Iowa. She described her work with state agricultural organizations and individual farmers to visualize future multi-objective management scenarios. Janis Dickinson of the Cornell Laboratory of Ornithology described a number of citizen science initiatives, the most recent being YardMap, that use social networking to spread positive conservation values. Finally Harry Greene of Cornell University used Pleistocene rewilding as a frame to discuss the desperate situation of large and dangerous organisms (Donlan et al. 2006). He then overviewed conservation success stories and the hope such initiatives can provide.

These presentations informed and inspired two days of energetic discussion. Attendees were asked to envision bold new ways of “doing conservation” and to explore the challenges and opportunities facing on-the-ground practitioners. Most attendees committed to the development of one or two concrete products. One group is proposing a 100-year relationship between ESA, scientific



From left to right: Members of the 2<sup>nd</sup> ESA Emerging Issues Conference organizing committee Dr. Susan Cook-Patton, Dr. Bernd Blossey, Laura Jane Martin, Dr. Dov Sax, and Dr. Ashley Dayer, at the National Conservation Training Center in Shepherdstown, West Virginia.

researchers, and a community facing the challenges of climate change. Another is suggesting that NSF develop a “conservation science” track. Other products include policy papers, scientific papers, and guides for management.

The conference was also notable for the involvement of graduate students and post-docs. I first conceptualized the conference with Dov Sax and Bernd Blossey. Susan Cook-Patton and Ashley Dayer (Cornell University) were key members of the organizing committee. And twenty students and post-docs were awarded competitive grants to present their research. Student poster presentations ranged in topic from tropical mesoherbivore decline, to commercial Internet trade of endangered plants, to integrative land use planning in Indonesian peatlands. Another of the critical products to emerge from this conference is an article that explores how students are in a unique position to advance conservation science because they are open to interdisciplinary training, willing to take risks, and attuned to the environmental concerns of their generation.

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