

# CONSERVATION PRACTICE AT THE LANDSCAPE SCALE

DANIEL N. LAVEN, NORA J. MITCHELL & DEANE WANG, guest editors

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## Examining Conservation Practice at the Landscape Scale

*Daniel N. Laven, Nora J. Mitchell, and Deane Wang*

### Introduction

TODAY, MANY CONSERVATION EFFORTS OPERATE AT THE LANDSCAPE SCALE. This large geographic scale for conservation practice has developed for several reasons. First and foremost, the fields of conservation biology and landscape ecology indicate that effective conservation of biota that have extensive home ranges or migrate over large territories requires a landscape-scale approach to protecting these organisms (Forman and Godron 1986). Concurrently, there has been an increased recognition of cultural landscapes and associated understanding of the value of traditional land use and practices that have created regionally distinct areas (Alanen and Melnick 2000; Rössler 2000; Phillips 2002; Barrett and Mitchell 2003; Fowler 2003; Harmon and Putney 2003; UNESCO World Heritage Centre 2003). Finally, there is a growing awareness that the inherent linkage between nature and culture manifests itself in a complex pattern at the landscape scale, ranging from a mosaic of wild and managed spaces (Harmon 2002; Brown, Mitchell and Beresford 2005) to broad gradients from urban to wildland (Bradley 1984). Experience has also illustrated that conservation strategies across this diverse set of land uses and social contexts can be complementary and mutually reinforcing especially when considered in a broader biophysical and cultural landscape-scale framework (Phillips 1998; Beresford and Phillips 2000; Mitchell and Buggey 2000; Minter and Manning 2003).

A landscape-scale approach has begun, in many places, to successfully achieve conservation goals; however, many challenges remain. For many contemporary researchers and practitioners, landscape-scale approaches represent substantial shifts in conservation thought and practice (Minter and Manning 2003; Phillips 2003). Establishing government-administered protected areas has been a cornerstone of conservation in many countries

around the world, beginning in the United States with Yosemite (originally set aside as a state reserve in 1864) and Yellowstone (in 1872) national parks. Yet it is now widely acknowledged that many protected area boundaries do not encompass the scale necessary for ecological processes or the scope required to represent the full story of cultural heritage. In addition, this strategy of designating areas to be protected, as important as this has been and continues to be for con-

servation, has often resulted in isolated “islands” of partial protection embedded in a landscape impaired by fragmentation and habitat loss (Harris 1984, Robinson et al. 1995, Shafer 1995, Bissonette 2002). For this reason, ecologists urged a broader network approach that featured networks across a landscape mosaic (e.g., Dyer and Holland 1991), and in 1998 the World Conservation Union (IUCN) emphasized the importance of transitioning from “islands to networks” (IUCN unpublished report, cited in Phillips 2003). To build effective networks over larger landscapes does, however, require new strategies and innovative collaboration across disciplines and political and ecosystem boundaries.

### **Lessons from the landscape of experience**

During the last fifteen years, there has been an emergence of collaborative models that involve a diversity of stakeholders and interests that operate at different and often overlapping scales across large biocultural regions (Wondolleck and Yaffe 2000; Brunner et. al. 2002; Brown Mitchell, and Tuxill 2003; Tuxill, Mitchell, and Brown 2004; Brown, Mitchell, and Beresford 2005). As a result, collaborative efforts with diverse sets of partners are now filling roles once played exclusively by state and federal entities (Brick, Snow, and Van De Wetering 2001).

Given this current surge of interest in landscape-scale conservation, it is timely to examine recent experience. In fact, the genesis of this thematic issue of *The George Wright Forum* is an annual lecture series, titled “Conservation at the Landscape Scale: Emerging Models and Strategies,” which seeks to share knowledge about new approaches. The series is cosponsored by

the National Park Service Conservation Study Institute and the Rubenstein School of Environment and Natural Resources at the University of Vermont (for additional information and an archive of lectures, please visit [www.uvm.edu/conservationlectures](http://www.uvm.edu/conservationlectures) or [www.nps.gov/csi](http://www.nps.gov/csi)).

This thematic issue of the *Forum* describes a number of large-scale conservation initiatives. Five case studies are included, ranging from cross-international boundary work in the northern Appalachians (Emily Bateson) and the Rockies (Charles Chester) to the conservation efforts of the regional watershed of the Potomac (Glenn Eugster); and from the cultural heritage of America’s distinctive regional landscapes (Brenda Barrett) to the biodiversity of the Brazilian Atlantic forest (Gustavo A. B. da Fonseca et. al.).

Brenda Barrett illustrates the landscape-scale strategy embraced by national heritage areas, which are collaborative initiatives where the National Park Service is one of many partners. Although many heritage areas are initially driven by conservation of cultural resources, many areas also embrace ecosystems such as riverways. This strategy relies on the notion of heritage to link people to landscapes through a common vision, while integrating conservation goals with economic and community development interests. In the next paper, Glenn Eugster describes the identity of the Potomac region for a diverse set of residents and stakeholders, reviews the challenges, and begins to shape a way forward that recognizes the scale and diversity of the place.

The remaining papers adopt international perspectives and explore landscape-scale initiatives in the context of biodiversity conservation. Charles Chester’s paper provides an abbreviated history of transpor-

der conservation in North America. From this context, he analyzes the Yellowstone to Yukon Conservation Initiative (Y2Y), and concludes by offering lessons learned for landscape-scale conservation from this experience. In the following paper, Emily Bateson introduces a similar, newer trans-border effort in a region that spans the Canada–U.S. border from Nova Scotia to New York. Although Two Countries, One Forest (2C1 Forest, or “to see one forest”) is still in its formative stages, this initiative builds on the Y2Y experience by creating a unifying vision and framework for the ecological health of the Northern Appalachian region. The next paper by Gustavo A. B. da Fonseca and colleagues argues that the conservation of biodiversity hotspots is most effective in a landscape-scale context. They make a compelling case for broadening the focus of conservation planning to the landscape level. Doing so, they argue, will greatly increase opportunities to integrate conservation and sustainable development goals by addressing ecological and economic dynamics together. The final paper, by Jeffrey McNeely, reminds us that past trends in conservation are but one indicator of the future, and he challenges us to think more deeply in imagining new directions. McNeely describes the recent IUCN experience with scenario planning as one tool for encouraging dialogue among diverse interests in thinking about a shared future. Clearly, the ability to engage diverse stakeholders is critical for landscape-scale efforts given their reliance on partnerships and collaboration.

### **Concluding remarks**

This varied set of examples illustrates the complexity, multiple benefits, and urgent challenges of landscape-scale con-

servation, while also identifying a wide range of elements that contribute to success. These models require network building, new forms of partnerships, and, in some cases, new forms of governance (Goldsmith and Eggers 2004; Tuxill, Mitchell, and Huffman 2005). Recent experience also suggests that successful landscape-scale efforts can integrate ecological, cultural, and recreational values with economic and community development. It is key that conservation strategies be integrated more fully into development plans and future visions for a region. As a broader range of values are considered as part of large-scale efforts, it will be important to find ways to integrate multiple perspectives and objectives and to engage new constituencies.

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**Daniel N. Laven**, Conservation Study Institute/Rubenstein School of Environment and Natural Resources, University of Vermont, Burlington, Vermont 05405; Daniel.Laven@uvm.edu

**Nora J. Mitchell**, Conservation Study Institute, National Park Service, 54 Elm Street, Woodstock, Vermont 05091; nora\_mitchell@nps.gov

**Deane Wang**, Rubenstein School of Environment and Natural Resources, University of Vermont, Burlington, Vermont 05405; Deane.Wang@uvm.edu