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Editorial

Our visual landscape: analysis, modeling, visualization and protection

This volume contains updated and peer-reviewed versions of many of the papers originally presented at the 'Our Visual Landscape' conference on visual resource management held in Ascona, Switzerland in August 1999 (OVL, 1999). The conference was seen as a long overdue follow-up to the 1979 Lake Tahoe, USA meeting titled 'Our National Landscape' (Elsner and Smardon, 1979). While, perhaps not as ambitious in terms of volume of papers or range of representation as the earlier meeting, this meeting did bring together many of today's leading researchers in visual landscape analysis and protection. Various techniques of modeling and analysis were described as key technological contributions to management of landscape aesthetic resources. The landscape is both inherently visual and also much more than simply visual. Many papers reflect the multiple criteria that must be applied in landscape planning and management, while others have visual aspects as their primary focus.

What has changed since 1979? This was a question much discussed as we looked out over the beautiful landscapes surrounding Lago Maggiore. In some minds, very little had changed — the major themes, concerns and unanswered questions were much the same. To others, we were in a whole new world of technological and methodological opportunities. It seems clear that understanding human responses to the landscape and developing methods for planning and management of the landscape are still major challenges. Although, significant advances have been made and exciting new options are emerging the challenges to our understanding and the complexity of many of the issues are still daunting.

Twenty years ago, computer graphics were limited to wire-frame representation of landscape through distorted squares and symbolic trees. Few — certainly in landscape research — were considering the application of virtual reality, artificial intelligence, interactive decision-support-systems, cellular automata, autonomous agents or the Internet. Now we are surrounded by all this cyber-potential. Some of these new technologies are introduced, in their application to landscape planning, by Bishop (1999).

Advances in computer and video graphics are of major interest to landscape researchers. Some of the major developments of recent years have involved better representation of vegetation (Muhar, 2001, pp. 5–17), augmentation of site video with computer graphics (Nakamae et al., 2001, pp. 19–32) and automatic generation of landscape imagery from GIS-based data (Perrin et al., 2001, pp. 33–47). Ervin (2001, pp. 49–62) presents an overview of the research agenda in landscape modeling and visualization.

A number of the papers in this volume make extensive reference to, and use of, spatial information systems and related technologies. However, it is also notable that very few have the technology as their primary focus. These contributors were concerned with outcomes first and the means of achievement second. Gimblett et al. (2001, pp. 63–79) uses autonomous agent modeling to explore recreator behavior and satisfaction in a landscape where wildness experience is a major planning criterion. Oh (2001, pp. 81–91) focuses on management of urban development — especially protection of views to surrounding landscape — and drew on geographic information systems (GIS) and visual analysis techniques. Miller (2001, pp. 93–106) uses virtual-GIS technology to understand processes of landscape change. Hehl–Lange

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(2001, pp. 107–115) draws on virtual reality (VR) technology to explore the relationship between visual landscape and ecological function. Bishop et al. (2001, pp. 117–125) extends the VR concept to consider monitoring human behavior in virtual environments. Danahy (2001, pp. 127–138) explores the processes of landscape design through interactive modeling and simulation.

Another key theme running through the papers concerned the validity of our modeling and visualization tools. Orland et al. (2001, pp. 139–148) pose a number of questions about how these technologies will influence landscape planning in the future and will these changes meet our societal needs or be open to abuse. Palmer and Hoffman (2001, pp. 149–161) concentrate on the validity of scenic landscape assessments while Lange (2001, pp. 163–182) is concerned with levels of realism in computer simulated landscapes. This raises a series of questions about what is real, how do we display reality, how do people respond to simulated environments, does this raise the possibility of new planning paradigms, what questions can visual simulation effectively address, what distortions of the planning process might be introduced by heavy use of simulation and what other information needs to accompany visual representations?

This wide range of issues implies the need for a code-of-ethics in landscape visualization. Stephen Sheppard first wrote on the criteria for appropriate and effective simulation in Sheppard (1989). Here (pp. 183–199), he updates that thinking considerably, taking into account both advances in technology and a further 10 years of experience with the crystal ball of computer graphics. The manner in which we employ visualization and some continuing uncertainties about its appropriateness in multicriteria-based planning are also raised by Bell (2001, pp. 201–211) in the forestry context.

The potential competition for concern and support between aesthetics aspects of the landscape and broader productivity and ecological issues is also the concern of Schmid (2001, pp. 213–221), Nohl (2001, pp. 223–237), Krause (2001, pp. 239–254) and Ewald (2001, pp. 255–266). Schmid reviews these issues in the context of the Swiss legislative framework while Ewald argues that the chocolate box view of Switzerland masks a cultural neglect of landscape aesthetics. Krause presents an innovative, and highly visual, approach to integration of ecological, environmental and social values. Nohl, in pursuit of sustainable landscape use, argues for aesthetic categorization of landscapes as beautiful, sublime, interesting and plain, thus, taking account of their multiple functions.

This broadened view of landscape raises fundamental questions about the constituents of landscape aesthetics and human judgement. Daniel (2001, pp. 267–281) argues that, at least in the developed world, both increasing bio-centric (green philosophy) and social construction views of landscape will reduce the importance of formal aesthetic considerations. Steinitz, in his photo-essay (2001, pp. 283–287), returns to fundamental questions of visual assessment and explores the relationship of preference and memory in landscape. He argues for a more complex family of visual assessment models.

It is clear that we have some very advanced tools for simulating landscape change, measuring of visual preference, monitoring and modeling environmental behavior and validating our imagery, responses and models. It could be argued, nevertheless, that we remain unsure of what we need to simulate, measure or model. Do we, indeed, really know what we are trying to achieve in visual resource management? Who is our constituency, what is our underlying goal? This uncertainty seems to arise from the multidisciplinary nature of visual resource management and the fact of changing societal norms and values. This may be our misfortune — to be forever uncertain about our role — or our bounty — to be forever challenged and hence adaptive. We continue, drawing from both the arts and the sciences, our search for tools and meaning.

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