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# Clouds among the Ecological Visions

DANIEL B. BOTKIN AND KENNETH W. CUMMINS

**I**n 2002, the Ecological Society of America (ESA) appointed a committee of 20 scientists, known as the Ecological Visions Committee, “to develop an action plan for the Society and for the future of ecological science in general” (Palmer et al. 2004). A policy statement by a major scientific society can be influential, leading to changes in government funding priorities for the science it represents. It can also generate discussions, new research, and new applications of that science. One could also argue, as does Ann M. Bartuska, deputy chief for research and development at the USDA Forest Service, that such a docu-

ment is useful per se because it presents the conventional wisdom of the society and its leading professionals (Bartuska 2004).

A seemingly impossible task confronted the committee at the outset. As the authors note, ESA made clear that the committee members “were *not* asked to identify the most critical research questions nor to prioritize a list of research topics” (Palmer et al. 2004; emphasis in original). But how can an action plan for a science be developed if one is forced to avoid identifying the most critical research questions? Isn’t that what science is about? Without a

clear statement of these questions, the application of science to policy, actions, and education is rudderless.

The committee’s report, *Ecological Science and Sustainability for a Crowded Planet* (Palmer et al. 2004), focuses on three areas: “building an informed public; advancing innovative, anticipatory research; and stimulating cultural changes that foster a forward-looking and international ecology.” The problem is self-evident: These lofty goals come across as opaque, vague, and confusing—symptoms that plague the entire 55-page report.

The report delivers nearly 50 “action items” that range from the obvious to the duplicative (some of the recommendations have been made innumerable times) to the seemingly self-serving (“Seek a Nobel or equivalent prize in ecology”). Who would argue against a recommendation such as “Promote a thoughtful public today and educate future generations so that the public can use the best ecological knowledge when making individual choices about sustainability”? Indeed, many have worked hard to seek “an informed public,” and some have even developed methodologies (such as modern polling) to study the success of such attempts. But a reader unfamiliar with ESA’s history and professional culture could easily conclude that the authors believed no one had ever thought of their suggestions before. This conclusion is encouraged by the writing style, and especially by the use of only modern references, which seems to suggest that the recommendations in the report are new ideas.

The report states, for example, that “relatively few people or institutions routinely translate ecological information and concepts into knowledge that is directly applicable to real-world decisions.” A reader could conclude that the society was unaware of at least a century and a half of efforts by scientists to improve the environment—to name a few, George Perkins Marsh’s 1864 *Man and Nature*, the first modern statement of the effects of civilization on nature; Paul Sears’s 1935 *Deserts on the March*, a classic in the history of science-based 20th-century environmental action literature; and the landmark symposium *Man’s Role in Changing the Face of the Earth* (Thomas 1956), not to mention Plato, Cicero, Thoreau, Muir, and Thomas Jefferson.

Similarly, the report’s first recommended action, “Establish an international network of Centers for the Ecological Implementation of Solutions,” could give the mistaken impression that the authors are unacquainted with the successful activities of scientists in the 20th century to help the conservation

of nature—for example, IUCN (the World Conservation Union) and the International Whaling Commission. The latter, begun by three scientists from different countries with an interest in whaling—and now made up of representatives from 58 nations that have voluntarily agreed to abide by a convention aimed at conserving whale stocks—has had a large impact on commercial whaling. The commission’s successes and failures could provide useful guidance for the kinds of actions recommended in the report.

The report’s second action item, which calls for a program that would have ecology experts “score legislative and executive branch proposals for their impact on ecological sustainability, and...identify experts who would expeditiously provide input and testimony on pending legislation or regulations,” conjures up the unlikely vision of a vast group of congressmen and senators and their staffs waiting anxiously for the appearance of ecological experts, hoping that these experts will tell them what to do. It also er-

roneously suggests that such activities have not been tried before.

A reader of the report might also be confused by its ideological emphases. In an attempt to deal with the reality of human population growth, the report seems to give up on setting a limit to that growth. This has to do with the way the report discusses environmental design, focusing on what might be interpreted as engineering approaches that adjust the environment to suit high human population densities. If ESA is going to immerse itself in value judgments—a dangerous tack for a professional scientific society, and one that risks compromising its scientific mission—then it would be equally possible, and probably preferable, to recommend that all possible economic, social, and political drivers be enlisted to move from a quantitative human society (always more, bigger, and longer) to one with a qualitative emphasis. As in medicine, the goal should be not just to live longer, but to live better. Overabundance (perhaps reasonably described as exceeding carrying capacity) of any non-human population (exotic or native; microbial, plant, or animal) is viewed with alarm and is almost always the target of control measures. Yet this logic is seldom extended to the one area where it really matters to all populations: the overabundance of humans.

Reading the report, we wondered whether a large committee appointed by a professional scientific society was the best way, or even a useful way, to achieve the society's stated goals. Many successful applications of environmental sciences have been led by individuals or very small groups who understood social and political processes and made use of that knowledge. The work of the late Bud Heinselmann, for example, represents an interesting alternative approach. Heinselmann played a key role in the creation of the Boundary Waters Canoe Area as the nation's first designated wilderness area. He quit his career job as a USDA Forest Service scientist to pursue this objective and moved to Wash-

ington, DC. Heinselmann gained support for the measure by getting to know the secretaries of congressmen who were on the committees important for the wilderness designation. He said that the secretaries were the key—once they realized you were legitimate, persistent, and decent, they opened doors for you to key congressional staffers and then to the congressmen. It was a slow, tedious, thankless job for which he received little recognition, but it worked.

Another alternative approach is represented by Lee Talbot's accomplishments with legislation and regulations in the 1970s, when he was on the staff of the Council on Environmental Quality. In that capacity, he was to a great extent responsible for the successful passage of the Endangered Species Act, the Marine Mammal Act, and other federal decisions important to biological conservation. By understanding political processes in the United States, he played a major role in ending the use of the poison 1080 (sodium monofluoroacetate) against coyotes and other wildlife (Botkin 2003).

In total, the ESA committee's report suffers from the banal statement of the obvious and often-repeated; it falls victim to assertions of ideology rather than science; and it provides a too-large list of recommendations that leaves a reader casting about for a major direction. It reads like a report written by a large committee, and many of its pronouncements are grammatically incorrect. At best, the report could force ecologists to consider what approach might work to develop the science and its applications, but at worst it will receive the ridicule of scientists outside the field and diminish the reputation of ecologists and of the society.

Perhaps, as Bartuska argues, the statement of the agreed-on action items by the experts is influential enough, and the report does make some useful and practical recommendations, such as a call for postdoctoral programs "to place promising early-career ecologists on Congressional staffs and in federal agencies" (though this is not an original idea,

as the report notes). But why should the society take a large, unnecessary risk? In the short term, ESA could hire a professional science writer to reduce the report to a short list of action items stated clearly and forcefully. If the community of ecological scientists is truly devoted to improving the world's environment and the human condition, and helping human societies achieve sustainability of natural resources, those scientists had better focus immediately on what it really takes to get things done, and that short list could be of some help. In the longer term, we recommend that ESA help promote the work of individuals and small groups to establish a series of central scientific questions, and then from these questions develop action plans related to real-world problems of sustainability. A list of central scientific questions—in order of their priority to society—needs to be developed, with an explanation of their implications for policy, for action-oriented scientists, and for education.

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