Communicating science on Capitol Hill: a case for embedded ecologists

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In the December 1998 issue of the Ecological Society of America's newsletter, I wrote about how, as a Congressional Science Fellow, I was disturbed to find that not a single ecologist had been invited to testify at a US Senate Environment and Public Works (EPW) Committee hearing on the Endangered Species Recovery Act of 1997. The Endangered Species Act (ESA) was at that time – and still is – a contentious political issue. There was more to that story. After the hearing took place, I attended a "mark up" of the bill (my first) in the EPW Committee. What made this day even more out of the ordinary was that my boss, Senator Daniel Patrick Moynihan (D-NY), was unable to attend the meeting. I would be serving as his "proxy".

The ESA is considered by the environmental community to be the pillar of environmental legislation in the US. Efforts to reauthorize the bill had been stalled in the Senate since 1992. The committee was debating the bill's many compromises, hammered out by moderates from both sides of the aisle. Several amendments were proposed; one that guaranteed adequate funding to implement the reauthorized Act was, in my opinion, critical to its workability.

After debate, the funding amendment was defeated. Now came the time for the committee to vote on the entire bill. With the amendment to guarantee funding for the ESA defeated, my recommendation to the Senator was simple – I thought that he should vote "no". This, of course, meant that as the Senator's proxy *I* had to vote "no". What happened after that was probably the most unnerving episode of my brief congressional career. The Committee Chairman, Senator John Chafee (R-RI), decided not to accept my proxy vote (his prerogative) and said that he would like to discuss the bill with Senator Moynihan personally before the vote would be accepted. Fuelled by an overdose of adrenaline, I made the long run back to the office only to find my Legislative Director (LD) talking to the Senator on the telephone. To my horror, Senator Chafee had already talked to Senator Moynihan, who decided to change his vote.

This story had, for me, unexpected lessons. My LD explained that Senators Moynihan and Chafee were old friends and had tremendous respect for each other, regardless of party affiliations. More than likely, the bill would never see the light of day on the Senate floor. By voting with the Chairman, Senator Moynihan earned political capital that he could use in the future.

What did I learn from this experience? I realized that no matter how important we may think science is, it is only one of many factors considered in the making of environmental legislation. Personal relationships can be as important, or more important, than other factors. Moreover, I learned that politicians are often as naïve about the ecological sciences as I was about politics. I could only have learned these lessons by participating as an insider in the policy making process.

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The current ecological science–policy model

In the seminal report, *Science – the endless frontier* (Bush 1945), public funding for science was justified on the basis of the anticipated social benefits of research. Basic research was described metaphorically as science feeding a "reservoir" of knowledge in which benefits flow downstream to society over the long term. The implication was, of course, that science must keep a "healthy distance" from the policy arena. More recently, the reservoir model has been questioned because it lacks political accountability and assumes that societal benefits are inherent in all scientific knowledge (Byerly and Pielke 1997; Sarewitz *et al.* 2004). Moreover, there are cultural and procedural barriers that block the flow of information between the science and policy communities. These include differences in training, values, and perception of uncertainty and predictability (Pouyat 1999; Bradshaw and Borchers 2000). Byerly and Pielke (1997) suggest the reservoir model results in a denial of accountability and actually encourages what they call an "elitist isolation" of the scientific community from the rest of society.

How, then, can we make the interaction between ecology and policy more productive and efficient? The typical answer from ecologists is that we need to more effectively communicate our research to politicians, with the implication that the transfer of information is one-way. But is information for use in political decision making limiting? Or rather, are effective decisions limited by the willingness of politicians to accept scientific information? And furthermore, is that information presented in a form and delivered in a timeframe that makes it usable by politicians? I suggest that answers to these questions require some insider knowledge of the political decision-making process among ecologists.

The case for embedded ecologists

Scientists are often asked to offer their opinions in public (eg as witnesses at congressional hearings) at a level of certainty which may make them uncomfortable. By contrast, on a one-on-one basis, the same scientists feel more at ease discussing their research results, having more time

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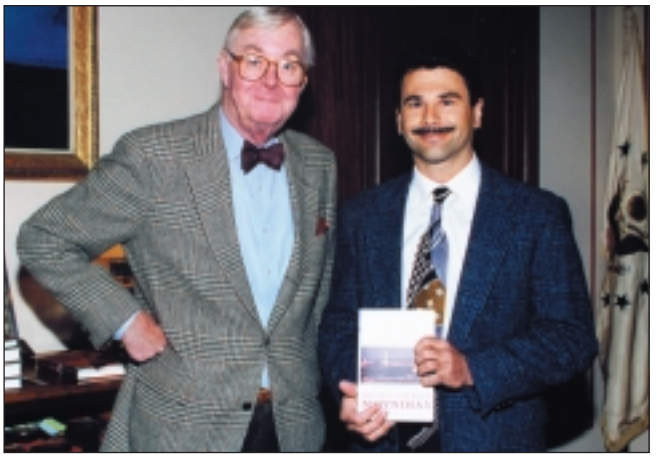
to explain the complexity that is typically inherent in most environmental issues (Pouyat 1999; Sarewitz and Pielke 1999). To bridge this disconnect, ecologists may need to learn more about the specific informational needs of politicians.

A good example of how interpersonal relationships can be effective in the transfer of knowledge is the Cooperative Extension Service created by the Smith-Lever Act of 1914. This Act created a system of county agricultural extension agents charged with communicating new technologies from the US Department of Agriculture (USDA) directly to farmers. The 1960s television show "Green Acres" featured a character named Hank Kimball, who played a county agricultural agent. Kimball appeared in most episodes of the show and was portrayed as being part of the family. Although I personally do not recall instances in which Hank actually transferred agricultural knowledge, I am confident that, if he had, Oliver (the farmer) would have taken his advice – not only because he trusted him (more so, at least, than he trusted Mr Haney), but because the agent had first-hand knowledge of the farmer's needs.

In light of the productive relationships that have developed between agricultural experts (Hank and the USDA) and users of agricultural knowledge (Oliver and other American farmers), I propose that interpersonal relationships between ecologists and users of ecological knowledge must also be developed at local and national scales. For many ecologists, the most convenient way to develop such relationships is to become personally involved in environmental issues. At the local scale, numerous opportunities exist to participate in stakeholder deliberations, providing technical advice to governmental and non-governmental groups (Pouyat 1999). However, at the national level, such as the US Congress, there are far fewer opportunities for ecologists to develop such interpersonal relationships.

To close the gap between ecologists and policy makers, I propose a program of embedding ecologists into the political system in much the same way as the US military embeds journalists into combat units in Iraq. It is likely that by embedding journalists, the military hoped to influence information presented to the public (Jensen 2003; Tumber and Palmer 2004). Is that not also what we, the ecological community, would like to accomplish? Another outcome of embedding journalists in combat units has been the development of relationships between journalists and soldiers. Experience during the Iraq invasion suggests that it was this empathy which led to media criticism of the poor management and inadequate provisioning of combat units (Jensen 2003). I propose that embedding ecologists in the political community would also lead to the development of empathetic relationships, resulting in a more effective transfer of knowledge between the ecological and political communities. If, as a scientific community, we train and encourage PhD ecologists to work at the federal level, these individuals could choose career paths leading to positions on Capitol Hill (or in state governments) while continuing to maintain close ties with the ecological science community.



Senator Moynihan and the author in the Russell Senate Office Building, 1997.

There are challenges related to the "embedded" ecologist model. Critics of this strategy have suggested that combat unit journalists may have compromised their objectivity and that their close association with a single unit prevented them from seeing the "big picture" of the war (Jensen 2003; Tumber and Palmer 2004). There is no doubt that these issues will arise when ecologists are embedded in the political system. However, such challenges can be addressed through appropriate training and by encouraging these ecologists to keep close ties with the scientific community (eg attending the ESA annual meetings, participating in one of the Society's standing or ad-hoc committees, or participating in the peer review process).

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