

Scientific Information and Natural Resource Politics: Positive and Negative Interactions

William Ascher
Claremont McKenna College

Prepared for the 2003 AAAS Meetings

This paper focuses on how scientific information can make more effective contributions to the public policy of natural resources and the environment. Scientific information can play a crucial role in reining in special interest politics, but it can also be abused, rendering scientific inputs into the policy process ineffective. Natural resource policy often reflects the politics of sleight of hand: environmental and biodiversity costs of natural-resource exploitation are unclear; scientific findings that challenge existing resource policies are distorted or suppressed; scientific “lessons” are over-simplified or distorted; resource-exploitation doctrines and classifications are only superficially related to scientific principles; resource policy failures are not attributed to the appropriate actors; and scientific uncertainty (on such issues as global warning) is used to rationalize inaction rather than guiding the more constructive strategy of hedging to address risk.

Politics *per se* is not pernicious; it is essential as the process for “shaping and sharing of values”¹ which inevitably gives rise to some degree of conflict. When we speak of the “political uses” of scientific information, we must keep in mind that this information is often used properly in the “politics of the policy process.” Healthy politics and sound science can serve clarify and secure the public interest. Defining the public interest is always subject to debate, but some policies are glaringly not in the public interest. Better scientific information can often reveal this. The constructive uses of scientific information regarding natural resources and the environment include identifying issues requiring public policy attention (focusing attention through analysis of trends and projections), and discrediting the policy alternatives that science reveals are *not* in the public interest.

Therefore scientific information often threatens special interests – reliable and credible scientific information leaves less room for policy advocates, in or out of government, to gain support for policies, procedures, and jurisdictions that run counter to the public interest. Special interest advocates are vulnerable to immediate political embarrassment and diminished credibility in later policy debates. The misuses of science often amount to strategies to counter this threat.

Private special interests often try to undermine the full impact of reliable scientific information by:

1. suppressing or biasing information gathering, to minimize information and analysis that challenges their preferred policies;

¹ Harold D. Lasswell and M.S. McDougal, *Jurisprudence for a Free Society* (1992),

2. inappropriately generalizing the “lessons” of experience, reaching self-serving conclusions;
3. attributing scientific causation that minimizes their responsibility for environmental damage or resource depletion;
4. exploiting scientific disagreement on secondary issues to convey that scientific accord is lacking, so that they can justify actions at variance with the public interest, or delay government action.

Although “special interests” are often taken to mean private interests outside of government, government agencies and the science community itself also have their own *institutional interests*, which can contribute to the problem. The policymakers within state agencies often strive to expand the jurisdiction of the agency, with the motives of enhancing its authority, budget, opportunity to fulfill the agency’s mandate, and often, the opportunities for personal remuneration. They also strive to increase the internal manageability of their agencies; this is a major reason why agency leaders push for the simplification of resource management and environmental-protection doctrines. And, of course, agency personnel, whether in leadership or rank-and-file positions, are motivated to avoid blame.

For government agencies, the pressures of bureaucratic interests often dictate the abuses of scientific information – in even more ways than private special interests:

1. interpreting the implications of scientific information in ways that ignore the complexity of the situations, to support simplified procedures and decision criteria that reduce the agency’s uncertainty of control;
2. suppressing or biasing information gathering, to minimize information and analysis that challenges the agency’s performance or jurisdiction;
3. endorsing classification schemes that reinforce the agency’s jurisdictional claims, at the expense of choosing the most scientifically appropriate classifications;
4. inappropriately generalizing the “lessons” of experience, reaching self-serving conclusions regarding responsibility for past successes or failures, and implications for jurisdiction;
5. attributing scientific causation that minimizes the agencies’ responsibility for failures, at the expense of distorting the true causal system;
6. over-simplifying models that make the agency’s policies seem less prone to uncertainty;
7. misinterpreting scientific uncertainty as justifying the agency’s inaction, when uncertainty actually calls for wise hedging strategies;
8. exploiting scientific disagreement on secondary issues to convey that scientific accord is lacking, so that the agency can justify inaction or excuse policy failures.

The scientific community, like any other group of people, also has interests. Respect, professional reputation, funding, and discretion to pursue preferred research projects can all be strong motivators.

frequently exacerbates these problems by refusing to risk its prestige by cooperating in efforts to discover provisional consensus, or succumbing to the temptation to exaggerate certainty.

Strategies for avoiding these problems, based on the successes of the National Research Council, are very promising.

For the generation and dissemination of scientific information to avoid these problems, scientists should pay attention to ten principles:

1. Accepted scientific information reduces the scope for interest-serving politics.
2. Interest-serving political actors will often ignore inconvenient scientific information when they can do so.
3. Scientific information is not relevant for all discourses: demand for scientific information undermines rights arguments.
4. Policy-useful scientific information has different criteria than scientific information as regarded within science.
5. Scientific information is most effective when it is cast in terms consonant with the administrative and legal concepts and frames of reference
6. Apparent scientific “consensus” is crucial for public and policymaker credibility
7. Uncertainty has different meanings for scientists, professional risk assessment analysts, and the public.
8. Credibility of scientific information thrives on digestible “stories”.
9. Non-scientists hold the stereotypical Popperian model of science more than scientists do.
10. When there is uncertainty, simplified heuristics will be employed that find often inappropriate parallels to other scientific phenomena.

How to free scientific assessment from the suspicion of bias?

- Jointly funded research and assessment
- Highly prestigious governmentally-sanctioned institutions, such as the National Research Council