

Societal Values and the Proper Role of Restoration Ecologists

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Restoration ecologists, like all practicing applied ecologists, confront two broad challenges. First, effective restoration requires a goal or policy, preferably an unambiguous one that is articulated, accepted, and codified (Lackey 2003). This therefore becomes a mandate for implementing the necessary restoration strategy. Second, restoration tools and techniques are often technically challenging and may require the application of poorly understood ecological principles. Altering ecosystems to create some desired past or new state often results in unexpected, sometimes disastrous ecological consequences.

Both challenges are important and formidable, but here I will focus on the first, because without resolving it we cannot accomplish the "how-to" challenge of the second. Many of restoration ecology's so-called failures are due less to technical inadequacies than to a lack of straightforward and broadly accepted restoration goals.

In a perfect world, society sets clear public policy goals, usually through elected or appointed officials or career bureaucrats who implement legislative directives. Setting restoration goals requires choosing between competing values and priorities. Theoretically, at least, the public's values and priorities are considered pertinent, not those of bureaucrats or scientists. Restoration ecologists provide scientific information coupled with professional judgment on the consequences or feasibility of alternative restoration goals, but ultimately the choice of goals should be a societal one.

As anyone with experience in public policy will agree, the deliberative democratic process tends to be messy. One key cause is that public opinion is often badly fractured with respect to ecological policy issues. In such a political environment, it is impossible to come to a broad consensus on what an appropriate goal should be. For example, there are at least a dozen articulated visions of what salmon restoration should entail in the western United States. Achieving each goal would require different actions and policies which, politically speaking, creates different sets of winners and losers. For salmon recovery and other divisive ecological restoration issues, no governmental institution has the power to force the adoption of a clear, succinct restoration goal. More typically,

the goal is so vague that few find it objectionable.

In the absence of agreement over restoration goals (or even that restoration is needed), technocrats have an understandable impulse to insert what they think is, or should be, the appropriate goal. The temptation to insert personal values is also great, because technocrats require a specific ecological target to implement a restoration program. For example, should restoration be aimed at recreating the ecological state that existed at the beginning of the Holocene, just prior to 1492, or at the end of last week? The answer is a value judgment, a policy choice – the product of political deliberations, not a scientific decision. Certainly, restoration ecologists and other scientists should assess the feasibility and ecological consequences of achieving each possible restoration target, but the choice lies with society in general.

Similarly, notions of degraded or damaged ecosystems, metaphors of ecosystem health or biotic integrity, or the relative importance ascribed to natural conditions versus altered ones need to be calibrated by societal values and preferences, not by those offered by scientists and technocrats (Lackey 2001). For example, one person's "damaged" ecosystem is another person's "improved" ecosystem. A "healthy" ecosystem can be either a malaria-infested swamp or the same land converted to an intensively managed cornfield. Neither condition can be considered "healthy" except through the lens of an individual's values and preferences.

We applied ecologists must be on guard constantly for the incursion of normative science into our technical language and thought. Normative science has built-in, often subtle policy preferences. Referring to an ecosystem as being "sick" or "healthy" implies a value judgment, suggesting that one ecosystem state is preferable to another. Such a determination may be appropriate as a personal or collective policy judgment, but should not be offered under the guise of science.

Given that society often does not articulate a clear policy goal for applied ecologists, what should a conscientious restoration ecologist do? First, know clearly the boundary between scientific or technical issues and value judgments. To the extent possible, try to exhort decision makers to focus on the often fractious value choices, rather than the technical and scientific debate, which frequently ends up serving as a surrogate polemic for an inability to settle value debates. Also, be brutally honest with decision makers about the technical feasibility of each possible policy option and the uncertainties associated with the resulting ecological consequences. Often, the most useful input that restoration ecologists can provide is to identify the probability of success for various possible restoration targets and the associated ecological risks.

Restoration ecology is a promising but still emerging science. We must avoid the trap of mixing personal policy preferences and judgments with scientific information and expression. Restoration ecology has too much to offer society to risk losing its credibility, by having its potential

scientific contributions dismissed because they are infected with policy advocacy masquerading as neutral science.

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About the Author:

Dr. Robert T. Lackey, senior fisheries biologist at the U.S. Environmental Protection Agency's research laboratory in Corvallis, Oregon, is also courtesy professor of fisheries science and adjunct professor of political science at Oregon State University. Since his first fisheries job 40 years ago mucking out raceways in a Sierra Nevada trout hatchery, he has dealt with a range of natural resource issues from positions in government and academia. His professional work has involved all areas of natural resource management and he has written 100 scientific and technical journal articles. His current professional focus is providing policy-relevant science to help inform ongoing salmon policy discussions. Dr. Lackey also has long been active in natural resources education, having taught at five North American universities. He continues to regularly teach a graduate course in ecological policy at Oregon State University and was a 1999-2000 Fulbright Scholar at the University of Northern British Columbia. A Canadian by birth, Dr. Lackey holds a Doctor of Philosophy degree in Fisheries and Wildlife Science from Colorado State University, where he was selected as the 2001 Honored Alumnus from the College of Natural Resources. He is a Certified Fisheries Scientist and a Fellow in the American Institute of Fishery Research Biologists.