

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, perhaps a policy, preferably a fairly unambiguous one which must be articulated, accepted, and codified (Lackey, 2003). The goal thus becomes a mandate or directive for implementing the necessary restoration strategy.

Second, the actual restoration tools and techniques are often technically challenging and may require the application of poorly understood ecological principles. Altering ecosystems, either to create some desired past state, or some desired new state, often results in unexpected, sometimes disastrous, ecological consequences.

Both challenges are important and formidable, but I will focus on the first, restoration goals, because the second, the “how to” challenge, cannot be accomplished effectively without resolving the first. Many of the so-called “failures” in restoration ecology are less due to technical inadequacies than to lack of straightforward and broadly accepted restoration goals.

In a textbook perfect world, clear public policy goals are set by society, usually acting through elected or appointed officials or by career bureaucrats implementing legislative directives. Setting restoration goals requires choosing between competing values and priorities and, theoretically at least, it is the public’s values and priorities that are 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 developing public policy will attest, the deliberative democratic process tends to be messy. A key cause of the messiness is the fact 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 ought to be. For example, there are at least a dozen articulated visions (possible goals) on what salmon restoration *should* be in the western United States. Achieving each salmon restoration goal would require different actions and policies and, politically, creates different sets of winners and losers. For salmon recovery and other divisive ecological restoration issues, no institution of delegated governance has the power to force adoption of a clear, succinct restoration goal. More typical is adoption of a goal so vague that few find it objectionable.

¹ *The views and comments presented are those of the author and do not necessarily represent those of any organization.*

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In the absence of concordance regarding goals for restoration (or even for restoration as a recognized need), there is an understandable impulse by technocrats to insert what they *think* is (or *should be*) the appropriate goal. Also, the temptation to insert personal values is great because technocrats require a specific ecological target in order 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 is a societal one.

Similarly, notions of *degraded* or *damaged* ecosystems, metaphors of *ecosystem health* or *biotic integrity*, or the relative importance ascribed to *natural* conditions vs. *altered* conditions 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 malarial infested swamp or the same land converted to an intensively managed corn field. Neither condition can be seen as "healthy" except through the lens of an individual's values and preferences.

Those of us who work in applied ecology 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 in a "sick" or a "healthy" state is predicated on a value judgment that one state of that ecosystem is preferable to another. Such a determination or observation may be appropriate as a personal or a collective policy judgment, but it 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. *Second*, to the extent possible, try to exhort decision makers to focus on the often fractious value choices rather than technical and scientific debate which often ends up serving as a surrogate polemic for an inability to adjudicate value debates. *Third*, 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. Practitioners should strive to avoid falling into 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 it is infected with policy advocacy masquerading as policy neutral science.

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Author's Biography:

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 more than four decades ago mucking out raceways in a trout hatchery, he has dealt with a range of natural resource issues from positions in government and academia. His professional work has involved many 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.
