

Trends in the restored marsh: Study of the mitigation marsh has been too brief to establish trends. Langis et al (1991) report that soil nitrogen levels did not increase during the two-year period of study. Resampling of the elevation contour for cordgrass cover showed significant increases between 1987 and 1989 (annual report to Caltrans, 1990). Cordgrass density and total stem lengths have been measured from 1989-91 (last sample in September 1991), and will be analyzed for trends. Due to lack of funding, the epibenthic invertebrate studies were not continued after Rutherford completed her thesis work.

Conclusion. We share with John Rieger the greatest hope for restoration success wherever it is attempted. His impression that "the restoration work has substantially improved the quality of this wetland" conveys that hope. What science adds is careful scrutiny of selected attributes and quantitative comparisons. Among the ultimate judges of habitat quality will be the clapper rail. If the 1991 population increase (from 189 pairs in 1990 to 235 pairs in the region) continues, there should eventually be enough birds to demonstrate, through nesting and recruitment, whether the man-made habitat meets its needs and helps to sustain the species.

Respectfully submitted,
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Guest Editorial

What's in a Name?

A Californian reflects on mine reclamation in Florida, the definition of restoration and its relationship with other activities.

By Gail Newton

When I first read the announcement of SER's third annual conference, which included the symposium entitled "Restoration on Surface-Mined Lands," I thought, What? Restoration on mined lands? It sounds nice, but what does it mean? And, more important, does it ever happen? Should the two words, "restoration" and "mining," be allowed in the same sentence?

In retrospect I realize that my skepticism reflected my experience with reclamation of mined lands in California. I decided to see these "restored mined lands" for myself and signed up for the field trip to phosphate mining areas. What I saw surprised me and ameliorated my opinion. The reclaimed phosphate lands in Florida at least appeared to resemble naturally occurring wetlands. Some, however, had been constructed on sites not formerly occupied by wetlands. This raised another question. Was this creation of wetlands, revegetation of wetlands, landscaping of potholes, or truly restoration of wetlands? This question, once again, raises the issue of the definition of restoration and its relationship to the various practices of our membership.

The dictionary definition of restoration is, simply, to put something back the way it was. When applied to ecosystems, I assume this means to bring the ecosystem back into some former, historic or "natural" condition. But can we really restore ecosystems on drastically altered landscapes (such as open pit mines in California), where at best the soil structure is altered or, more commonly, the soil is gone altogether? And if we could, would that be restoration or creation? Can we fully restore ecosystems even under the best of conditions, such as on lands where the soil structure has not been altered? Theoretically, we can, but current data indicate that we often fall short of this goal. For example, Joy Zedler's data for wetland restoration in California show that five years after construction an artificial marsh failed to match a natural reference marsh with respect to a number of ecological functions (R&MN 9, p. 21). How much ecological functioning has to be demonstrated before a project can qualify as restoration? Is it appropriate to refer to such a project as restoration?

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Perhaps the term "restoration" itself is a problem here—a term that means different things to different people. If so, perhaps we simply need to define it more clearly. But that task has proven to be a difficult one. SER has struggled to define this key word. The current result—"the process of intentionally altering a site to establish a defined indigenous, historic ecosystem. The goal of this process is to establish the structure, function, diversity, and dynamics of a specified ecosystem"—is a bit cumbersome, and each word cries out for further clarification.

Perhaps one of the problems here is that we are trying to fit too many related practices under this single term. Restoration is part of a multi-dimensional spectrum that includes, for example, ecosystem creation, rehabilitation, reclamation, reforestation, revegetation, and landscaping. All these terms overlap to some degree; yet, all connote a different goal and/or level of activity. What distinguishes restoration from all these other, related activities, is that the goal of restoration is the literal reconstruction of the model ecosystem—not just bringing it back to "health," but actually re-creating it in detail. In mined-land reclamation in California, in contrast, the goals are usually stable configurations, safe slopes, and erosion control. Here the situation is clear. The latter is reclamation, perhaps rehabilitation, but not restoration. But what about the Florida phosphate mine project that includes attempts to *restore* some of the original wetlands, *create* other native habitats, and *revegetate* pasturelands using a mixture of forage and native species?

Projects like these illustrate the variety of approaches to land rehabilitation that are often mistaken for restoration. And I suggest that we need to standardize the usage of an umbrella term for such projects—I suggest ecological rehabilitation.

Within this larger category, however, we still have to clarify what restoration really is, and, at the organizational level, what the mission and scope of SER should be.

In my view it is important that we stick to a strict definition of restoration while encouraging open, inclusive policies at the organizational and political levels. Let me explain why.

First, regarding definitions, why insist on a strict—some might say narrow—concept of restoration? Why bother with distinctions between such closely related activities as, say, restoration and rehabilitation?

I feel that there are at least two reasons. The first is based on the distinctive value of the process of restoring habitats. People involved in this work solely for the purpose of replacing lost habitat values often talk of being part of the healing process, of putting back or giving back to their environment. For this very personal reason alone restoration should not be confused with revegetation solely for erosion control purposes, or with rehabilitation in a more general sense. Restoration is a more ambitious process than either revegetation or rehabilitation, and this should be recognized and appreciated, by restorationists, their clients, and the general public. The second reason has to do with the conservation of the systems we are managing. Quite simply, if we don't insist on a strict

definition of restoration, especially in the context of mitigation for environmental impact, then we are in grave danger of losing our classic landscapes and the species that inhabit them.

Rehabilitation won't replace lost ecosystems; restoration might. Clearly the distinction is an important one. Preserving and defining such distinctions will both improve communication among professionals and help educate the public as to the various alternatives to land management and their environmental implications.

At the same time, while these distinctions are important, they should not be used to define our membership. While reclamation or rehabilitation projects may not be restoring habitats, they are providing valuable information that pertains to ecological restoration. Mine reclamationists, for example, may not be doing restoration in the strictest sense. But their work is undoubtedly related to restoration—often it prepares the way for it—and the resulting knowledge is certainly useful to the restorationist. By including reclamationists, then, and by developing close relationships with organizations such as the American Society for Surface Mining and Reclamation and the Canadian Land Reclamation Association, SER encourages a healthy exchange of information and ideas.

Much the same may be said for those in other, related areas, including foresters, landscape architects and wildlife managers. They may not be doing restoration all the time, but who among us is? SER, after all, is the Society for Ecological Restoration, not the Society of Ecological Restorationists. Such a society would be pretty exclusive. Its membership might be confined to the Nature Conservancy and the University of Wisconsin-Madison Arboretum. It would exclude all of those who, like myself, "lust in our hearts" for ecological restoration, but who are more often involved in erosion control or revegetation projects—projects where restoration is not a goal. It would also cut SER off from the knowledge, professionalism, and credibility provided by those members who rehabilitate lands in an ecologically sensitive manner but whose work falls somewhere short of restoration in the strict sense.

This would be unfortunate for SER as an association. It would also be a disservice to the larger cause of environmental conservation. The truth is that restoration needs these other disciplines and related practices to develop as a technology and an effective conservation strategy. Many of the techniques used in restoration have evolved from the landscaping and erosion control industry; many have drawn from advances in ecological theory. By the same token other disciplines, and the science of ecology, also have much to gain from restoration. SER, then, should not exclude the reclamationist, revegetationist, or landscape architect; rather it should bring them together to further a larger, shared purpose, encouraging a many-sided conversation. But this conversation can only go forth if we can stop stumbling over the term restoration, and start using it only in the strict sense in our conferences and publications.