

ADDENDUM

LATE ABSTRACTS

Thursday 18 January 2007

Botanical Ethics

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Botanical Ethics and Protection of Federally-listed Plants.

The Federal Endangered Species Act provides protection to federally-listed species. Regulation of adverse effects to plants and animals is addressed in sections 7, 9, and 10 of the Act; however the conditions under which plants are protected differ from the conditions for protection of animals. This difference can be traced back to English common law which became the basis for much of American law and of most wildlife protection law, including the ESA. Under English common law, plants were treated as part of the real estate on which they grew and thus were considered private property. Animals, however, were not owned by a property owner. Protection for plants was not included in the 1966 Endangered Species Preservation Act, the precursor to today's ESA, but was added in 1973 when the ESA was passed. In certain circumstances, protection for listed plants is limited and some actions that may adversely affect listed plants are not specifically considered in the ESA.

Friday 19 January 2007

Revegetation and Restoration

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Developing Metrics of Success in Restoration across Ecological Scales

How do we know that our restoration is a success? In cases with clear targets or easily measured reference conditions this question may have a straightforward answer, but for complex situations without clear reference conditions there may be no simple answer. For the latter situation I suggest that metrics of success in restoration may best be developed by adopting a multi-scale, multi-species approach along the traditional levels of ecological investigation: individual organisms (e.g. for physiological status of dominant plant species), populations (e.g. for breeding density of indicator species such as birds), communities (e.g. for species richness, diversity, and trophic connectedness), ecosystems (e.g. for nutrient cycling), and landscapes (e.g. for spatial connection of restored sites). My lab has conducted research on metrics of success for large-scale riparian restoration along the Sacramento River over the past decade. This research has

focused on community and ecosystem metrics of success including nitrogen cycling, leaf litter decomposition, soil ecology, seed dispersal, and patterns in species richness and diversity of both plant and animal communities. Some metrics show clear signs of success (e.g. soil bulk density, beetle assemblages), others illustrate areas of concern (e.g. plant species richness), and still others are more-or-less neutral with respect to success (e.g. leaf decomposition, nitrogen cycling). In combination with other investigators working at different scales, the intent is to develop a suite of criteria to effectively evaluate the degree to which large-scale riparian ecosystems are being successfully restored.