Faunal community development on disturbed lands: An indicator of reclamation success. Robert R. Parmenter, Department of Biology, University of New Mexico, Albuquerque, and James A. MacMahon, Dean, College of Science, Utah State University, Logan, Utah.

The contemporary approach to reclamation of disturbed lands usually follows an ''agricultural'' strategy, which oftentimes results in the development of spatially homogeneous flora dominated by a small number of species. In addition, the planting of alien or ''native-but-not-resident'' species creates unique floral communities that historically have not existed on the site or in the region. As a result, recolonization of animals is accomplished by only a small subset of the potential species pool, and may result in dramatic population increases of certain opportunistic species that have been released from resource limitation or competitive and predatory pressures. In many cases, the faunal communities of reclaimed sites bear little resemblance to pre-disturbance faunas or faunas of neighboring undisturbed sites. In view of the importance of invertebrate and vertebrate wildlife to ecosystem function (e.g., pollination, herbivory, seed predation and dispersal, soil aeration, litter decomposition), we suggest that an analysis of the faunal community development (including trophic organization, species dominance hierarchies, guild apportionments, population demographics, and species turnover rates) can be used as an evaluation method for successful reclamation. We further suggest that, during revegetation planning, the deliberate inclusion of heterogeneous plant architectures (both horizontal and vertical) at various spatial scales (micro-, meso- and macro-) will result in a landscape mosaic more conducive to the development of a highly diverse, self-perpetuating faunal community.