

Successional Processes: Importance for Obtaining and Evaluating Reclamation Success. James A. MacMahon, Dean, College of Science, Utah State University, Logan, Utah, Jeanne C. Chambers, Plant Ecologist, Intermountain Research Station, Logan, Utah, and Gary L. Wade, Botanist, Northeastern Forest Experiment Station, Berea, Kentucky.

Numerous biotic and abiotic factors affect succession. In the reclamation of disturbed lands some of these factors are under the control of humans - many are not. The key is in knowing for any given ecosystem what effects inputs of the reclamationist have on these factors and, consequently, on the rate, pattern, and trajectory of succession. This information gives reclamationists the ability to select the most appropriate land use and to "direct" successional processes towards that land use. It also gives an objective basis for evaluating if reclamation success has been achieved and, in some cases, indicates the best measures of success. This paper focuses on how knowledge of successional processes in different biomes can be used to obtain desired outcomes and select appropriate measures of reclamation success. Successional processes common to all biomes are defined and differences among those biomes are examined. The manner in which these differences influence inputs of reclamationists and consequent successional outcomes is then explored. Finally, we examine whether currently used measures of reclamation success are appropriate for the different biomes based on the desired successional stage and end land use.

