Applying theory in ecology and evolution to steer community reassembly and ecosystem functioning

How grassland restoration is an “acid test”

Ecological restoration provides a unique opportunity to test how the environment and evolutionary processes interact to affect the structure of developing communities and recovery of ecosystem functioning. The filter-framework model of community assembly predicts species in a community will be fewer than those that can potentially arrive due to abiotic conditions that prevent unsuitable genotypes from establishing and biotic interactions that prevent species from persisting over time. Environmental heterogeneity and within-species variation represent two filters ecological theory predicts will influence community diversity and ecosystem functioning. Thus, applying theory to guide restoration is an “acid test” of ecological knowledge.