Restoration of a Willamette Valley Wet Prairie: An Evaluation of Two Management Techniques

by

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Abstract

With less than one percent of Willamette Valley wet prairie remaining, proper management of extant sites is imperative. On The Nature Conservancy’s (TNC) Willow Creek Natural Area in western Eugene, Oregon, managers have used prescription burning and woody vegetation removal since 1986 to control the invasion of exotic species and woody vegetation. I applied hierarchical linear modeling to investigate how individual species responded to restoration treatments. This approach makes efficient use of TNC’s longitudinal data and their treatment schedule, which followed management needs rather than experimental protocols. Nine of 17 native species analyzed increased significantly one year after treatment and one decreased. Three of 10 exotic species analyzed increased significantly and two decreased. Fewer species showed significant responses two years after treatment, indicating effects were short-lived. The results indicate that management treatments have benefited key species in the short-term and offer lessons to guide management of Willamette Valley wet prairies.