

Okin, G. S., D'Odorico, P. & Archer, S. R. (2009) Impact of feedbacks on Chihuahuan desert grasslands: transience and metastability driven by grass recruitment. *Journal of Geophysical Research – Biogeosciences*: In Press.

Abstract

A simplistic model of grass-shrub dynamics was used to investigate the role of grass demographic processes on grassland-shrubland dynamics when grasses are in competitive advantage over shrubs. The model suggests a feedback between grass biomass and soil erosion may cause an abrupt transition to a shrubland state. The model explains how a simple change in either grass recruitment or grass mortality, presumably linked to climate change or grazing, could produce changes in Holocene flora and the conversion of grasslands to shrublands which has been observed throughout the southwestern U.S. in the past 150 years.