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## DECREASED PLANT AND ARTHROPOD RICHNESS IN LANDSCAPES DOMINATED BY OLD WORLD BLUESTEM GRASSES: IMPLICATIONS FOR WILDLIFE

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Old World bluestem grasses (OWBs, e.g., *Bothriochloa*, *Dichanthium* spp.) have become dominant throughout the southern and central Great Plains, altering native plant communities with concomitant effects for native wildlife. We examined plant and arthropod communities in areas dominated by native plants and areas dominated by OWBs at the Welder Wildlife Refuge in southern Texas. We sampled vegetation and arthropods on research plots (6 x 9-m, 5 each) every 4 weeks during summer 2011 and 2012. We found, on average, 2 (SE=0.2) more plant species, and 12-13 (SE=1.0) more arthropod species on native plant-dominated plots compared to OWB-dominated plots. Native plant-dominated plots also had 273 (SE=18.8) more individual arthropods in 2011, but 75 (SE=16.6) fewer than OWB-dominant plots in 2012, resulting from a population explosion and crash of woodlice in native plant-dominated plots. We recorded only 1 species of herbivorous arthropod from OWB-dominated plots in 2012; native plant-dominated plots had 5-6 (SE=0.68) additional herbivore species, suggesting that increased dominance by OWBs may create cascading effects on trophic dynamics. Because many species of wildlife depend on plants and arthropods for food, these changes in species richness and abundance suggest that restoration tools are required to reduce the competitive ability of OWBs. Traditional management strategies have not successfully reduced OWBs; as part of our research, we are modifying soil properties to attempt to provide novel management strategies for landowners to increase diversity of native species and habitat quality in grasslands impacted by OWBs.