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Oral Presentation

CLIMATE CHANGE, PLANTS AND TEXAS

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Climate is the major determinant of plant distributions. Changing climate is already impacting plant species directly through shifts in phenology, the timing of biological activities, shifts in species' ranges, for example northward spread of plant hardiness zones, and indirectly through increasing rates of fire frequency and large-scale die-offs. This talk will provide an overview of the most current climate projections for the U.S. and Texas, discuss the uncertainties inherent in those projections, and present information on the implications of climate change to plants. Grasslands will be used as a case study to illustrate the disparate impacts climate change will have on plant species. Grasslands have been the focus of many CO₂ enrichment and warming experiments in the quest to determine how grassland composition and productivity may change under altered conditions. A related focus of investigation has been the potential for climate change to exacerbate the encroachment of woody vegetation into grasslands given the predominance of the C₃ photosynthetic pathway in woody plants, which is more responsive to CO₂ than the C₄ pathway of many grasses. This talk will summarize what we know about the potential effects of climate change on grasslands and implications for the conservation and management of these and other plant species.