

## NATIVE SPECIES AND BIODIVERSITY THEME

### Thinking like a grassland: Challenges and opportunities for biodiversity conservation in the Great Plains of North America

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**Abstract:** Fauna of North American Great Plains evolved strategies to contend with the region's extreme spatiotemporal variability in weather and relatively low annual primary productivity. The capacity for large-scale movement (migration and/or nomadism) enables many species, from bison to lark buntings, to track seasonal pulses of productivity at spatial scales larger than most Great Plains counties. The capacity to retreat belowground (roots, seeds, burrows) enables another suite of species to survive unpredictable periods of resource scarcity. The imposition of a complex pattern of land ownership and land use boundaries onto Great Plains grasslands challenges the conservation of these species. Approaches to public and private rangeland management, frequently focused at the scale of individual pastures or ranches, limit our ability to conserve disturbance regimes and sustain animal movement, dispersal, and metapopulation dynamics at broad spatial scales. The vast majority of Great Plains grasslands are privately owned and managed by people who need to make a living, but also care deeply about conservation of the land. Engaging these people to manage disturbance regimes at larger spatial scales will require acknowledging that domestic livestock grazing can function as a central component of Great Plains disturbance regimes, provided they can move at large spatial scales, and coexist with a diverse array of native flora and fauna. Key opportunities to increase the scale of grassland management include (1) spatial prioritization of grassland restoration (e.g. the Conservation Reserve Program) to reconnect fragmented grasslands, (2) increasing acceptance of multiple grazers (e.g. cattle, horses, prairie dogs) and fire, particularly on public and CRP grasslands, (3) resolution of the fundamental discrepancy between managing livestock to avoid "overgrazing" while promoting intense grazing by native species (prairie dogs) or pyric herbivory restoration, and (4) partnerships among government agencies, conservation organizations, and landowners that address biodiversity conservation at the scale of grassland landscapes rather than pastures.