

BEYOND COMMUNITY ECOLOGY: GRASSLAND RESTORATION FOCUSED ON ECOSYSTEM SERVICE PROVIDES A TECHNICALLY FEASIBLE AND SCIENTIFICALLY VALID MEANS TO INCREASE ECOSYSTEM FUNCTION, COMMUNITY DIVERSITY, AND ECONOMIC VIABILITY AS A MODEL FOR LARGE-SCALE MIDWEST GRASSLAND RESTORATIONS

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Abstract: The current Midwest grassland restoration narrative is focused on restoring historic plant communities with species expected to maintain desirable community configuration and ecosystem function. This type of restoration is based on a narrow set of Gleasonian modern plant community ecology concepts such as competition and dominance, and is evaluated through subjective floristic quality and similarity indexes, and ecosystem function is expected to follow form. When ecosystem services are included in project goals, the focus on restoring historic plant communities shifts to focus on restoring functional ecosystems where project performance is evaluated through empirical data measured by nutrient regulation, soil stabilization and building, water regulation and purification, and by the production of high quality materials including food, fuel and textiles. This presentation casts an 800 km² watershed in Southwest MN as a case study to demonstrate how restoration based on ecosystem service will improve ecosystem function, integrity and community diversity while creating an economically viable mechanism to promote, maintain and expand grassland restoration efforts in the heart of the Midwest Corn-Belt Ecoregion. The take home messages offers a restoration model where 50% of the Midwest Landscape is restored to grassland and maintained by a management regime which includes a variety of grazing animals that promote ecosystem integrity, community diversity, and economic opportunities.