

# WORKING LANDS THEME

## Conservation Grazing to Sustain Watershed Function

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**Abstract:** Rangelands provision food and clean water, mitigate flooding, sequester nutrients, and supply critical habitat for a diversity of species. Livestock grazing management has been linked to impairment of essential watershed functions and dependent ecosystem services. For example, excessive stocking rates can degrade soil structure and increase runoff, create restrictive soil layers which retard rooting and carbon sequestration, elevate microbial pollutant concentrations in surface waters, and destabilize wetland habitats. These negative outcomes generally result when management strategies are implemented without consideration for conservation goals. However, there is substantial experimental and experiential evidence that conservation grazing strategies can mitigate potential negative grazing impacts on key ecological, edaphic, and hydrologic functions. For example, conservation grazing strategies have been associated with enhancement of soil organic carbon and infiltration capacity, reduction of invasive plant species, improvements in water quality, and stabilization of wetland habitat. In this paper, we synthesize the scientific evidence that site-specific conservation grazing strategies can be prescribed and implemented to balance agricultural production and conservation goals. We use several case studies to demonstrate the concepts in prescribing such grazing strategies and the mechanisms by which conservation outcomes result.