



Saskatchewan
Prairie Conservation
Action Plan

Prairie's Got the Goods Week!

Grazing boosts grassland carbon storage: An undervalued ecosystem service



Thursday March 21st, 2024 at 12:00pm MT or 1:00pm CT

Presenter: Dr. Edward Bork, University of Alberta

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Presenter: Dr. Edward Bork, Professor, Faculty of Agricultural, Life and Environmental Sci - Ag, Food & Nutri Sci Dept, University of Alberta

Presentation Summary:

Grasslands represent a widespread and economically important land use type in western Canada, and play a key role in supporting livestock grazing on both private and public land. Despite this, the current revenue streams provided by grasslands are limited to forage production and associated livestock, with no ability to generate income from alternative ecosystem services. In this overview I review the critical role of grasslands in providing the ecosystem service of carbon (C) storage, as well as the potential beneficial role of livestock grazing in enhancing C stocks. Various mechanisms are discussed for why, where and how grazing may enhance grassland C, including changes in plant diversity, species composition, and root:shoot C dynamics. Finally, I review the potential role of specialized grazing systems, including adaptive, multi-paddock rotational grazing, in altering grassland function, including forage production, water infiltration, soil microbial properties, and ultimately soil C storage. Collectively, this information helps lay an empirical foundation for how grasslands, including those used for livestock grazing, may enhance the important ecosystem service of C storage. Finally, using a combination of soil C stock estimates and land use footprint data on grazing, I provide an estimate of the economic value of livestock grazing for elevating SOC stocks across Alberta.

About the Presenter:

Edward Bork is the Mattheis Chair in Rangeland Ecology in Management, and Director of the Rangeland Research Institute at the University of Alberta. He has been teaching and conducting research for more than 25 years on basic and applied topics, including integrated weed control, grazing systems, fire ecology, forage production, agro-forestry, and recently, the role of rangelands in providing alternative ecosystem goods and services, including carbon storage, greenhouse gas reduction and biodiversity retention. He has supervised 48 graduate students, including 11 PhD students. Dr. Bork maintains close ties with the agriculture industry, and has given numerous extension talks.

PCAP's Prairie's Got the Goods Week is an annual series of webinars focusing on the goods and services provided by the native prairie ecosystem.