Saskatchewan Prairie Conservation Action Plan

Prairie's Got the Goods Week!

How does reconstructed prairie and wetland affect carbon sequestration and weedy invasion in agricultural landscapes?

Friday March 11th, 2022 at 12:00pm CST

Presenter: Destiny Magee, Bur Oak Land Trust

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Presentation Summary:

This presentation is based on my Graduate thesis research and will focus on the benefits of reconstructed prairie and wetland to agricultural landscapes through the U.S. Conservation Reserve Program (CRP). While the main priorities of the CRP program include reducing soil erosion and improving water quality, this study focused on the CRP fields potential benefits, such as increased carbon sequestration and biodiversity. Soil carbon in CRP fields and a subset of corn fields were compared in order to determine the impact of reconstructed prairie and wetlands on carbon sequestration in agricultural landscapes. Results showed that CRP fields decrease soil bulk density and increase carbon sequestration over time when compared to corn fields. CRP fields also increase the biodiversity within the landscape, which can be beneficial for native species, but also for weedy species. The other part of this study looked at the susceptibility of CRP fields to invasion by weedy invasive species Reed Canary Grass (Phalaris arundincea) and Wild Parsnip (Pastinaca Sativa). Results showed that increased grass species richness and grass percent cover decreased the chances of Reed Canary Grass presence in CRP fields. Likewise, increased forb species richness and forb percent cover decreased the chance of Wild Parsnip presence in CRP fields. This result suggests that increased biodiversity helps decrease the chances of weedy invasion into CRP fields.

Biography

I received my B.A. in Natural Resources and then my M.S. in Ecology at the University of Northern Iowa (UNI). While pursuing my B.A. I worked with the United States Geological Society (USGS) to survey fields enrolled in the Conservation Reserve Program (CRP), which led to my graduate research at UNI. I have always had a special interest in the ecosystem services of native vegetation in highly altered landscapes and currently work with the Bur Oak Land Trust in Iowa City, Iowa, administrating land management activities on native prairie, wetland and Oak-Hickory woodland.