

Presenter: Matthew Coghill

Title: Evaluating the Legacy Effects of Spotted Knapweed

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Abstract:

Invasive plant species threaten native plant biodiversity and disrupt and diminish ecosystem function. In North America, spotted knapweed (*Centaurea stoebe*) has spread across most of the Canadian Provinces and American States within the past few decades. Spotted knapweed is able to produce thousands of seeds per square foot, and those seeds can persist in soils for years. The plant has both immediate and long-term effects on soil biology and chemistry. Immediate soil effects have been shown reduce native plant establishment and growth. Long-term or legacy effects exist in soils when spotted knapweed alters soil properties, which may persist even following physical eradication of live stems, thereby affecting establishment and restoration of future native plant communities. These legacy effects have not been studied in communities invaded by spotted knapweed, and with the increasing threats harbored by this noxious weed it is important that we fill in this knowledge gap by studying the growth of native plants in knapweed-infested soil and experimenting with soil amendments to reduce the potential legacy effects of knapweed. My greenhouse study will investigate potential differences in growth of native plants grown alone and when planted with spotted knapweed in soils taken from a variety of sites with and without knapweed invasion. In addition, I will determine the effectiveness of a locally produced fly ash, an activated carbon source, at reducing the soil legacy effects contributed by spotted knapweed. This work will contribute to a growing area of research focussing on invasive plant mitigation in North American grasslands.