Tallgrass Prairie Center: The Weeds of CRP Polinator Habitat

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The Weeds of CRP Pollinator Habitat

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Background

- The goal of the Pollinator Habitat Initiative (CP42) is to help enhance and restore habitat for ecologically and economically important pollinator species.
- Like any other prairie restoration, CP42 habitat is susceptible to weed invasion.
- To date, there has been no formal analysis of the weed communities of CP42.
- High weed biomass can slow native establishment, lower native diversity, and lead to higher long-term management costs in prairie restoration [1,2], particularly if noxious weeds are present.
- The goal of this study was to survey weed density and diversity in a variety of CP42 pollinator habitat sites.

Research Question

1. What are the most common weed species in CP42 and what is their density?
2. Do CP42 sites of different age have different weed communities?

Methods

- We surveyed 15 CP42 pollinator habitat sites between May and July 2017.
- At each site, we established five 100 m transects in random positions.
- We surveyed all plants within 75 m of the transect centerline along the length of each transect.
- We report plant density as the total number of stems per m² at each site.
- We performed linear regressions between total weed density and site age, to examine whether CP42 sites of different age have different weed communities.

Results

- Weed density decreases with site age in CP42 pollinator habitat, from approximately 16 stems m⁻² in year one to approximately four stems m⁻² in year seven.
- Some annual weeds, such as marestail and lamb’s quarters, became less dense with time in CP42 pollinator habitat, while some perennial weeds, such as Canada goldenrod and wild parsnip, became more common with time.
- Canada thistle (1.58 stems m⁻²), wild carrot (0.21 stems m⁻²), and wild parsnip (0.07 stems m⁻²) are the most common noxious weed in CP42.
- Wild parsnip and other noxious weeds can be managed through mowing, herbicides, or by manually removing them [3].

Management Recommendations:

- Current management recommendations for weed control in CP42 include: mowing 3+ x in year one at a height of 10” and once in year two; targeted weed mowing; and spraying / burning noxious weeds [4].
- Our results indicate that: annual weeds do not require aggressive management as they decline with site age but that perennial and noxious weeds must be monitored and managed to control spread.

Future Direction

- Funding for this project is available through 2018.
- Increased sampling in 2018 will improve our understanding of weed communities.
- Increased sampling of older sites would be particularly valuable.
- Another factor to consider is temporal replication.
- Shifts in weed density between 2017 and 2018 would provide additional support for our conclusion that weeds become less dense with time in CP42.

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