A Prairie Calling

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FRIENDS OF NACHUSA GRASSLANDS

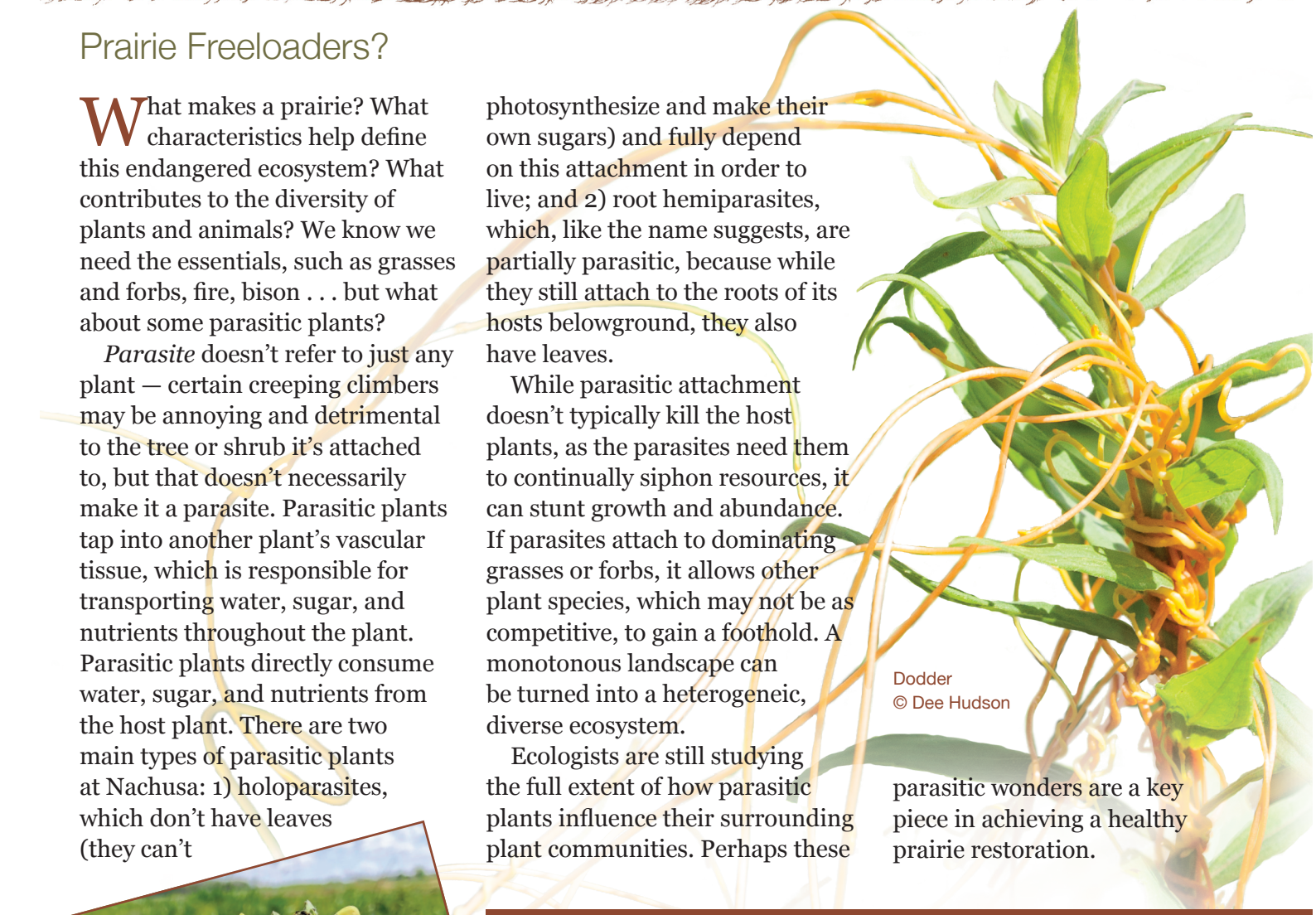
Prairie Freeloaders?

What makes a prairie? What characteristics help define this endangered ecosystem? What contributes to the diversity of plants and animals? We know we need the essentials, such as grasses and forbs, fire, bison . . . but what about some parasitic plants?

Parasite doesn't refer to just any plant — certain creeping climbers may be annoying and detrimental to the tree or shrub it's attached to, but that doesn't necessarily make it a parasite. Parasitic plants tap into another plant's vascular tissue, which is responsible for transporting water, sugar, and nutrients throughout the plant. Parasitic plants directly consume water, sugar, and nutrients from the host plant. There are two main types of parasitic plants at Nachusa: 1) holoparasites, which don't have leaves (they can't photosynthesize and make their own sugars) and fully depend on this attachment in order to live; and 2) root hemiparasites, which, like the name suggests, are partially parasitic, because while they still attach to the roots of its hosts belowground, they also have leaves.

While parasitic attachment doesn't typically kill the host plants, as the parasites need them to continually siphon resources, it can stunt growth and abundance. If parasites attach to dominating grasses or forbs, it allows other plant species, which may not be as competitive, to gain a foothold. A monotonous landscape can be turned into a heterogeneic, diverse ecosystem.

Ecologists are still studying the full extent of how parasitic plants influence their surrounding plant communities. Perhaps these parasitic wonders are a key piece in achieving a healthy prairie restoration.



Dodder
© Dee Hudson

Wood betony
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Several Parasitic Curiousities Call Nachusa 'Home'

Wood betony (*Pedicularis canadensis*) is a popular perennial root hemiparasite to include in prairie restorations due to its fast-growing underground rhizomes. Once it's established, it has a tendency to spread out much like a mushroom fairy ring. It prefers attaching to tall grasses and tall goldenrod. One of the largest patches can be found in the Eight Oaks planting. It turns out the bison love frequenting the same area since betony keeps the grasses a bit shorter — making them an easily accessible meal for our native grazers.

(continued on the back)

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There are a few scattered patches of the holoparasite dodder (members of the genus *Cuscuta*) throughout the plantings — you can typically spot the entangling mass of orange stems on a stunted patch of tall goldenrod.

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You'll find the perennial hemiparasite yellow downy painted cup (*Castilleja sessiliflora*) in sandy hill prairie plantings. There's a large patch of them in the Holland planting right near Lowden Road.

There is the confounding perennial hemiparasite star toadflax (*Comandra umbellata*), which are commonly found on some of Nachusa's remnant knobs and are notoriously difficult to grow in restorations.

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© "*Agalinis tenuifolia*" by Eric Hunt, Creative Commons, CC by 3.0

Slender false foxglove (*Agalinis tenuifolia*) is an annual hemiparasite known for its tiny purple flowers that don't bloom until around September.

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Large yellow flower false foxglove (*Aureolaria grandiflora*) is a perennial hemiparasite known for parasitizing the roots of oaks and elms. You can find them growing comfortably atop the brambly hills in Tellabs.

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Anna Scheidel is finishing her MS in conservation biology at Dr. Victoria Borowicz' lab at Illinois State University at Normal, IL. Her thesis work focuses on how several root hemiparasites interact with their plant communities at Nachusa and is being funded by a 2019 Friends of Nachusa Grasslands Science Grant. This is her second year on the restoration technician crew and her first year as crew leader.

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