the Bluestem Banner

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Widow Skimmer Dragonfly (Libellula luctuosa) At Kenesserie Tallgrass Prairie

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The following is the first in a series of articles describing the historical role of fire in the Tallgrass Ecosystem.

"When We First Come Here It All Looked Like Prairie Land Almost" By: Julie Courtwright

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For centuries prairie fire was a formative environmental force on the Great Plains. In the nineteenth-century, however, Euro-Americans brought to the region dramatically different settlement practices. In an effort to "civilize" the Plains, settlers attempted to suppress the unique fires that so frequently swept the land. Even so, prairie fire, through its symbolism and its absence, continues as a force on the Great Plains today.

In October 1878, rumors of an impending Indian attack sent the settlers of south-central Nebraska into a panic. Someone had seen a war party in Phelps County and neighbors urged neighbors to pack up and flee before the massacre began. One group of refugees went so far as to construct a fortress around a home in northwest Kearney County. Their actions seemed justified when a passing rider told them that he had seen the Indians on the prairie doing a war dance around a fire. After a tense night waiting for an attack that never came, settlers discovered that in fact the threat was not from the Indians, but from the fire. As residents were fleeing the rumored attack, a prairie fire had started in southwestern Phelps County. The "war dance" seen by the rider from a distance had been a group of settlers jumping around, yelling, and using wet gunny sacks to beat out the flames.

Although in this instance, blinded by false panic, these early Nebraskans could not see the fire before their eyes, most nineteenth-century residents of the Great Plains were well aware of the impact that prairie fire had both on the landscape and on their attempts to settle and prosper on the land. The fires were sometimes so intense that one adventurer called prairie fire the "master of the prairie."

Today, although the threat has diminished, modern Plains people retain an awareness of the historical fires that helped shape their region. Occasionally, modern fires help remind them. Blazes in Oklahoma, Texas, and Kansas swept over the prairie in 2006, scorching thousands of acres, burning barns, fences, and even homes that stood in the way. Hundreds of people were forced to evacuate as the fires threatened their towns. The media, perhaps more accustomed to reporting on forest fires, replaced the historical term "prairie fire" with a more neutral "wildfire," or occasionally with "grass fire," but the name change did not alter the event. Prairie fires, both present and past, are a presence on the Great Plains.

Other events, more pleasant than the threat of evacuation, serve as subtle nudges linking the legacy of fires to the consciousness of the region's people. In some areas, particularly in the Flint Hills of Kansas, controlled burns are still used to maintain the prairie. The annual firing of the prairie, known to locals as "burnin' pasture," is at once a necessary agricultural task and a traditional folk custom. It provides a stunningly beautiful reminder of fire's role. The people of Wichita, many of whom have never set foot on a ranch, understand the cause of the burnt grass smell that drifts into the city from the northeast every April. Artists and photographers capture the images to preserve regional culture, while journalists dutifully note the legacy both of Indian and Euro-American burning, but rarely dig deeper into the historical record.

Prairie fires, through remnant burns, art, literature, vernacular, and an intangible awareness that comes with roots in the region, are part of the identity of Plains people. The reasons are entirely historical. In this way, the "master" never gave up its hold over the prairie. Despite the continued presence of prairie fires on the Plains, both physical and symbolic, historians have, with a few exceptions, neglected them. Like the early Nebraska settlers, who saw the fire in front of them and yet focused their attention elsewhere, historians have limited their understanding of fire's role on the Plains by allowing scientists to dominate the subject while their attention rested on other topics,

most notably the great plow-up of Plains soil. This is an odd disjunction that needs correcting. The relationship between fire and humans has shaped Plains ecology and Plains history for centuries. The suppression of prairie fire, which came with Euro-American settlement in the nineteenth century, was one of the most significant events in Great Plains environmental history.

Prairie fire's role on the Plains, its culturally-driven use and suppression, and its enduring ties to regional identity make its story well worth our attention. The Great Plains is an environment particularly friendly to fire. It is a wet-dry landscape where, more than in other regions, periods of precipitation are often followed by drought. Nourished by moisture, grass grows abundantly during the wet times, particularly in the eastern tallgrass prairies where rainfall is more plentiful.

Then a dry season withers the vegetation, making it flammable, and western and southerly winds easily push fire across the gently rolling landscape, with few obstacles to impede its progress. Yet, in geologic time, the Great Plains only recently achieved the grass-dominated, treeless appearance that historical observers described. In the early Holocene (10,000 years ago), the equivalent of just yesterday in geologic time, the Great Plains of today was semi-open forest interspersed with grass. By the time Europeans viewed the Plains and recorded their observations, however, the area was an expanse of grass broken only occasionally by woody escarpments protected from fire.

The cause of the change is controversial. Some scientists argue that the grassland originated in the Miocene and Pliocene, some five to seven million years ago and before humans arrived on the scene. They maintain that fire had little to do with grassland creation or maintenance, that the Great Plains are almost exclusively a by-product of climate change.

"***On the other hand***," botanist Daniel Axelrod noted, "a considerable body of evidence has been assembled to indicate that fire has had a major role in the spread of grasslands." Some of the fires on the Great Plains came from lightning, although, as historian Stephen J. Pyne noted, "only a tiny fraction of lightning kindles fire," particularly on the prairies, where lightning starts only an average of one to five fires each year.

Julie Courtwright is a doctoral candidate at the University of Arkansas, specializing in the history of the American West.

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1. Ensure Organizational Capacity;
2. Facilitate the creation and restoration of tall grass communities;
3. Increase public awareness and stewardship of tall grass communities;
4. Identify and secure existing and potential tallgrass communities across the province;
5. Promote research and knowledge transfer of tall grass communities.

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http://www.tallgrassontario.org/memberships.html

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Planting a Pollinator Packet- Part 2 –Leo Lepiano

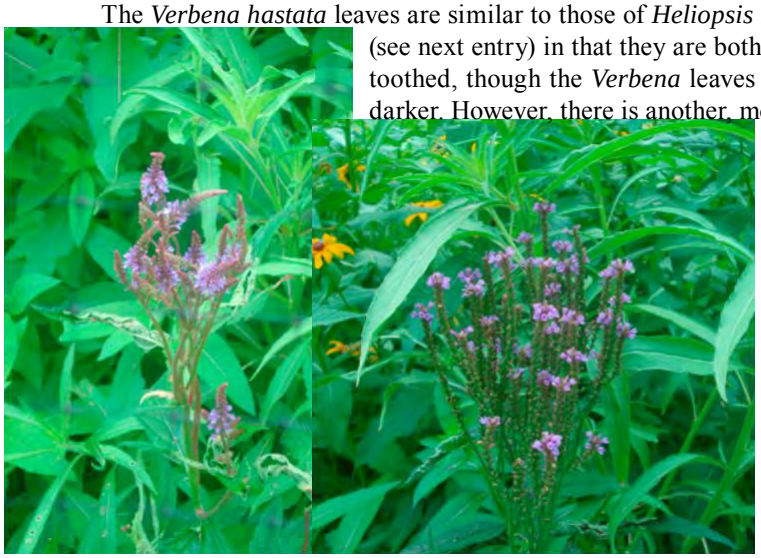
This article is continued from the previous edition of the Bluestem Banner (October 2013).

Virginia Mountain Mint, *Pycnanthemum virginianum:* Virginia Mountain Mint made only a brief appearance in our pollinator patch before disappearing behind other growth, but it was a tantalizing encounter as it hinted at future years of enjoying the plants' pretty purple-spotted white flowers. Though its leaves are similar to a couple of other plants in the packet (tall sunflower and butterfly milkweed), the young *Pycanthemum virginianum* was easily identifiable by its square stem (technically it is a rectangular prism), a distinctive feature of the Lamiaceae family.

Above: *Pycanthemum virginianum,* July 9th.

Blue Vervain, *Verbena hastata:* Yet another pleasant surprise this year was the Verbena hastata plant that made it to flower in the first half of August. The purple flowers lasted a month, as they unfurled from the bottom of the inflorescence spikes to the top (see photos).

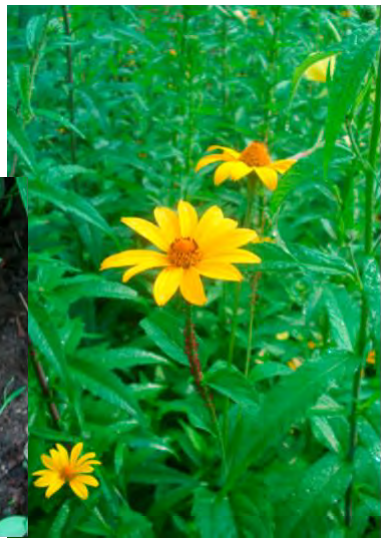
The *Verbena hastata* leaves are similar to those of *Heliopsis helianthoides* (see next entry) in that they are both opposite and toothed, though the *Verbena* leaves are generally darker. However, there is another, more obvious distinguishing feature: from a very early stage of growth (through to the end of August), *Heliopsis helianthoides* plants are highly attractive to red aphids. Fortunately, of the plants in the patch, these aphids only have a taste all for *Heliopsis*, so there is no risk of them spreading. If your seedling has these red aphids (photo in next entry) then you can positively identify it as *Heliopsis helianthoides* and not *Verbena hastata*.



Above: *Verbena hastata on* August 13th and September 3.rd

False Sunflower, *Heliopsis helianthoides:* Along with the differences between *Verbena hastata* and *Heliopsis helianthoides* mentioned above, there was a vast difference in quantity between the two. Both of the patches planted this year produced an abundance of flowering *Heleopsis helianthoides.* This species also proved to be quite hardy, with inflorescences still in bloom on a few of the plants in the Toronto patch during the first week of November.

The sunflower-like inflorescences of *Heliopsis helianthoides* face upwards towards the zenith (meaning the plane of their petals is horizontal), unlike most (all?) Sunflowers, which have inflorescences looking towards the horizon. In this way *Heliopsis helianthoides* are more similar to daisies than to sunflowers, hence their other common name "Smooth Oxeye."



Right: The opposite-leaf structure on a young *Heliopsis helianthoides.* Far right: Note the red aphids along the stem. These aphids did not cause any visible damage to the plants and did not spread to other species. They attracted a large number of ladybugs, which subsequently made the pollinator patches their homes (and breeding grounds).

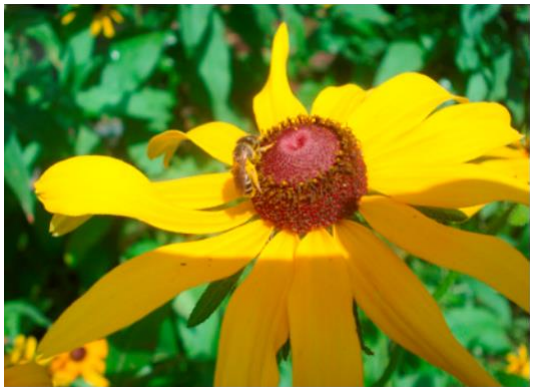
Common Weeds: If you're at all like me you have a bit of a neurosis surrounding just how positive your 'positive identifications' are. There were several plants that showed up in large quantities in both of my pollinator patches, and though some of them had leaves completely different than any I was expecting I was still hesitant to pull them out unless I could say for sure what they were. Even more difficult were the weeds that somewhat resembled the plants I was expecting. That said, here are a few weeds that commonly take root in newly turned soil in Southern Ontario.

Right: **Common Ragweed**, ***Ambrosia artemisiifolia***: This allergy-causing plant has quite beautiful leaves, which can make an unknowing gardener hesitate to weed it. However, these are best pulled out young as they grow large very quickly taking up valuable space and nutrients (also visible in this picture are common purslane [*Portulaca oleracea*] and wood sorrel [*Oxalis stricta*], both excellent additions to a salad).

Left: **Redroot Pigweed**, ***Amaranthus retroflexus:*** This weed (along with other species of the genus such as *Amaranthus hybridus* [image below and to the right] and *Amaranthus powellii*) can be easily confused with *Heliopsis helianthoides.* If these weeds are allowed to grow long enough they will make themselves known by their coarse green inflorescences. *Amaranthus retroflexus* has a pinkish/ red root easy to identify when pulled up.

Left: **Eastern Black Nightshade**, ***Solanum ptycanthum***: When I first saw this plant (which was widespread in both patches) I wondered if maybe seeds from a tomato plant from the backyard had made it to the front yard, a thought that I quickly dismissed on account of the quantity of this tomato-like plant. This weed, *Solanum ptycanthum*, resembles the tomato plant because it is in the same family. Like other 'weeds' this plant reaches flower quickly and so will reveal itself; however, as said before, it is better to keep your pollinator patch as free of weeds as possible, and that means it is better not to have to wait until the weeds to start flowering before you identify them. Pick out *Solanum ptycanthum* early by looking for holes in the leaves (I don't know what was munching on this plant, but it began on the very first leaves) and by its very succulent stem.

Black-eyed Susan, *Rudbeckia hirta*: It is with some reluctance that I've used the term 'weed' in this article, because it is a label that is derogatory and can lead to a lack of respect for those plants we do not (usually) plant. We are probably all familiar with this year's disastrously low numbers of Monarch Butterflies, which was due in part to the great reduction of Common Milkweed in Southern Ontario (Swamp Milkweed - the plant that enticed me to plant native species to attract pollinators - is also classified as a weed). What you may not know is that *Rudbeckia hirta*, a species included in the pollinator pack is listed on the Ontario Ministry of Agriculture and Food's list of weeds too. While *Rudbeckia hirta* is a species in the packet that you are more likely to encounter in both fields and gardens, it seems strange that such a striking plant should be classified as a weed. My first memories of *Rudbeckia hirta* are also some of my first memories of consciously seeing wildflowers growing in a field; I remember struggling even then to comprehend the relationship between garden flowers that were planted and these 'wild'flowers. Who planted the wild ones? Which came first? and what caused this split between wild and cultivated? It was a powerful confrontation with 'human agency' for a young child.



Above, left to right: The basal leaves of a young *Rudbeckia hirta.* Notice the tapering merger of leaf with stem. This becomes even more apparent on the leaves of the mature plants; an inflorescence just beginning to open; A pollen covered bee making a late-September visit to a golden *Rudbeckia hirta*.

Please check back for the final installment of this article in the next edition of The Bluestem Banner.

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