



What is a prairie?

Prairies are one of the rarest and most biodiverse ecosystems in the world! They are characterized by a lack of trees and tall shrubs, which were historically suppressed by regular fire and grazing. Prairies are dominated by perennial grasses that live multiple years. These grasses make up anywhere from 50 – 95% of a prairie's vegetation. Prairies also consist of a wide variety of sedges and forbs, or flowering plants. Prairies can range from dry to wet and across soil types, from rocky or sandy to silty clay.

Prior to European colonization, prairies covered 2.1 million acres across the state, including much of the landscape of southern Wisconsin. Prairie plants are natural builders of nutrient-rich soil. Because of this, Europeans plowed much of the prairie landscape for agricultural production, eliminating the natural cycles of the prairie and the soil-building process. Conversion of land for agriculture, urbanization, and loss of historical fire, grazing, and management by Native Americans have all contributed to an extensive loss of our prairie landscape. According to the Wisconsin DNR, less than 0.1% of native prairie remains in the state today. The most common type of prairie in Wisconsin is the tallgrass prairie, which is named because some of the most abundant grasses, like big bluestem and switchgrass, can grow well above six feet tall.

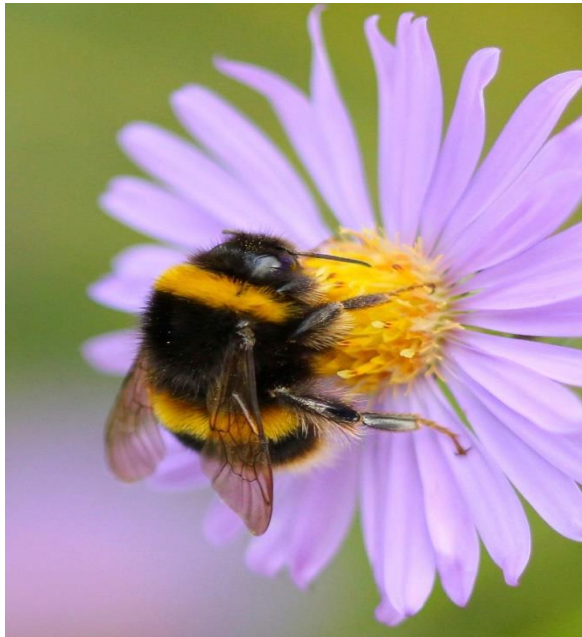
What lives in the prairie?

Prairies are home to a diverse array of life, including several organisms that might surprise you!

- **Plants** – More than 400 species of native vascular plants exist in Wisconsin prairies, many of which cannot be found in any other habitat type. This includes many beautiful flowering plants, which are an important, year-round resource for pollinators. Prairies also host many of Wisconsin's rarest plants, including several species of orchids and some milkweeds.
- **Insects** – According to the Lussier Family Heritage Center, more insect species use prairies than any other ecosystem. About 2,000 species of insects in our area are exclusively dependent on prairies. These include pollinators, like butterflies and bumblebees, as well as moths, leafhoppers, dragonflies, and many others.



- **Vertebrates** – Historically, prairies were home to large grazing mammals like bison and elk. While we may not see much of these large animals today, prairies are still home to many vertebrate animals, including several species of grassland birds, small mammals, reptiles, and amphibians.
- **Other organisms** – Prairies are also home to a wide variety of other organisms. They contain diverse communities of organisms we might not often think about, like mosses, liverworts, and lichens. Prairies are also host to organisms that are invisible to the eye, like bacteria and fungi in the soil.



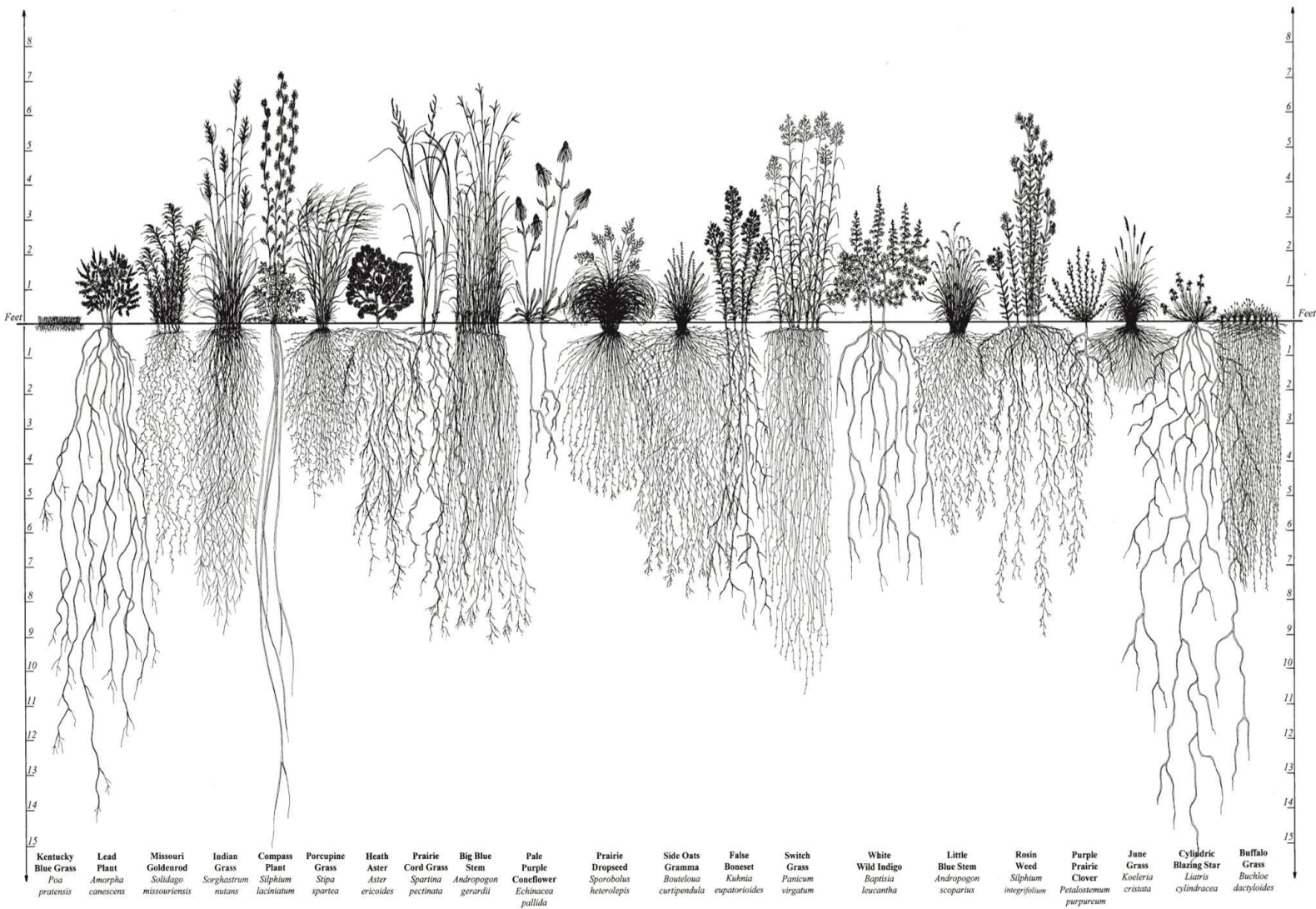
How do prairies help our environment?

Prairies' robust root systems provide a suite of ecosystem services that benefit our environment.

- **Rainfall and runoff infiltration** – The root systems and soil structure of prairies allow them to act like sponges, absorbing rainfall and water flowing across the landscape. This also prevents flooding and infiltrates sediment. One acre of established prairie can absorb up to 9 inches of rainfall per hour before runoff occurs and will intercept as much as 53 tons of water during a one-inch hour rain event.
- **Erosion control** – The mat of prairie roots works as an anchor to keep soils in place. This keeps nutrients and sediment from washing out of the prairie.
- **Nutrient reduction** – The sponge-like quality of the below ground prairie system also works to reduce excess nutrients contaminating the environment. Prairie plants are able to take up and use excess nitrogen and phosphorus that leach from nearby crop fields.
- **Other services** – Prairies provide many other ecosystem services that help create landscapes resilient to climate change and other environment disturbances. Some notable ones include carbon sequestration, invasive weed control, and providing wildlife habitat.

What lives beneath the prairie?

While the diversity of prairie life is exciting, what's going on belowground is equally fascinating and has important impacts on the function of the prairie ecosystem. The National Park Service estimates that 75 - 80% of prairie plant biomass is belowground in the form of roots. Many prairie plants have roots that reach five feet into the soil, and some have roots that extend up to 15 feet deep! The roots of prairie plants also spread horizontally in the soil, creating thick root mats below the surface. It is estimated that one acre of established prairie can produce 24,000 lbs. of roots! These root systems assist in stormwater infiltration, and are drought resistant. Compare those deep roots to the Kentucky Blue Grass on the far left of the diagram, which consists of a very shallow root system.



Root Systems of Prairie Plants