

Using Native Plant Communities to Reduce the Carbon Footprint of your Landscape

As climate change continues to increase extreme precipitation events, heat waves, and droughts around the world, it is imperative that we examine every possible solution for reducing the carbon footprint of our developments. Native landscapes can help significantly reduce this carbon footprint by increasing the amount of carbon absorbed by the vegetation and by reducing the use of fossil fuels in landscape maintenance.

In contrast to the roots of cool season turf grasses that only penetrate a few inches into the soil, native plants, particularly prairie species, have extensive deep root systems. These root systems are quite efficient at increasing the organic content of the soil, resulting in the deep black prairie soils that characterize the tall-grass prairie region that now makes up much of the corn belt. By removing carbon dioxide from the air through photosynthesis and pushing it deep into the soil in the form of roots, the prairie community helps improve the soil, as well as create a carbon sink. Areas established to prairie can be expected to be a carbon sink even when maintained by periodic prescribed fire, as burning only releases the carbon captured in the above ground portion of the plant, whereas two-thirds of the prairie biomass is below ground.

Even more beneficial to the carbon balance of your development is the reduction in fossil fuel dependent maintenance that results from native landscaping. Once well-established, (typically year 3) native prairie plantings may be mown once a year as opposed to up to 30 times per year for traditional turf. Not only does this greatly reduce carbon dioxide emissions, it also greatly improves urban air quality by decreasing emissions of nitrous oxides and volatile hydrocarbons since mowing equipment typically lacks the emissions controls for these pollutants that are required on cars and trucks.

As the recently released 5th report of the Intergovernmental Panel on Climate Change indicates, it is imperative that the conversion to low carbon systems be accelerated to prevent catastrophic climate change. Conversion to native landscapes can be a small part of this revolution.



As the iconic wildflower of fall in most of the northeastern quarter of the United States, the deep purple flowers of New England Aster evoke the misty sunrises and long dewy mornings of autumn. Adaptable to most sunny locations, New England Aster typically reaches 3 to 5 feet in height. It is an outstanding plant for rain gardens, tolerating up to 24 hours of inundation and long periods of saturation as well as the drying that typically occurs later in the season. The flowers are very attractive to butterflies and other pollinators and are a particularly important source of nectar for migrating monarchs. In a restoration, New England Aster is appropriate for habitats ranging from [Sedge Meadow](#) to [Mesic Prairie](#).