Stormwater Management
Post Construction

Bob Henrickson
Nebraska Statewide Arboretum, Inc.

Why use prairie plants?

- Ability to thrive despite Great Plains weather extremes and soil types
- A sedge meadow requires little if any supplemental irrigation once established
- Prairie plants resist insect pests and disease.
- Provide critical habitat for local wildlife

Disadvantages of Prairie Gardens

- A prairie landscape can look overgrown and weedy to the public
- Prairie landscapes require very large lot sizes or large estates to provide benefit
- Converting to a prairie garden is costly
- Plants are slow to establish and weed control is a problem

What are Sedges?

- Sedges are grass-like plants from the Genus Carex. There are over 60 Carex species native to Nebraska!
- Of all the species, there is even one called Nebraska sedge.
- Many are strictly clump forming plants and others spread slowly by rhizomes.

•Native sedges are not yellow nutsedge!

Yellow nutsedge is native to Europe and is from the genus Cyperus.

Why use sedges in stormwater BMPs

•Many municipalities require setbacks from intersections, require low height vegetation for visibility. Most sedges meet this design criteria.

The myriad of grass stems and leaves help slow fast moving storm water during spring rains, providing valuable erosion control.

Especially at the point source off the impermeable surface.

- Lowland prairie plants will help clean our water supply. Deep rooted prairie plants also have extensive surface roots that act as a filter.


Fireworks Restaurant & Ped. Trail - Lincoln


Planting spring 2009


Late May 2011

July 2011

NSA Display Gardens- UNL East Campus

NSA Trial Gardens
UNL East Campus

Fall 2009

Spring 2010

Spring 2011

Fall 2010

Late spring 2011

•Native sedges and rushes are a must for use in biofilter design.

•Proper selection of native species can provide year-round vegetative cover.

Acceptance Through Education!

•Cool season grasses, sedges and rushes provide a variety of benefits for stormwater management plantings.

•This group of plants are not only functional, but are ornamentally appropriate as well.

•They function as stabilizers, biological filters and provide food and shelter for wildlife.

The picture above shows the filtering effect of sedge. Notice the clearer water on the right side of the picture (downstream).

As vegetation ages and discards plant material or dies a natural flocculent can be released, which attracts negatively charged pollutant particles and causes them to settle out.

•Plants break dormancy in late March and quickly grow into a mound of foliage, often blooming by mid to late May

•Plants establish quickly, often reaching maturity in one growing season.

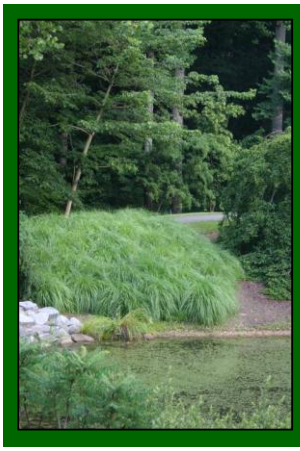
•Most Carex and Juncus species are very adaptable to soil conditions and thrive in heavy clay soils. These species are well suited for wet soils in spring to dry soils in summer.

The dense clumps compete for space with weeds and keep any aggressive forbs in check. Sedges form a lower canopy that works to cover the soil

If big plants are allowed to grow on their own, without competition, they soon take advantage by growing too big or spread too much.

What can we do about it?

- Use a variety of sedges and rushes native to Nebraska and the Great Plains region!
- Encourage more demonstration plantings in public places, corporate campuses, educational institutions and national business chains.



Plant species have been chosen based on their availability

The use of nursery starts is best as they are more likely to establish and prosper that seeding and there is less invasive vegetation establishment

Native Sedges Limit Invasive Weeds

"the most important step in limiting reed canarygrass invasions was the rapid establishment of a perennial plant community that could sequester both light and nitrogen"- Susan M. Galatowitsch, University of Minnesota

Carex comosa, Longhair Sedge

Gray's Sedge, *Carex grayi*

Porcupine Sedge, *Carex hystericina*


Carex muskingumensis, palm sedge



'Little Midge' palm sedge



Broom Sedge, *Carex scoparia*

Tussock Sedge, *Carex scricta*

Foxtail Sedge, *Carex vulpinoides*


Cattail Sedge, *Carex squarrosa*


Common Spikerush, *Eleocharis*


Common Rush, *Juncus effusus*

Torrey's Rush, *Juncus torreyi*

Plants for Dappled Shade

•Many woodland wildflowers are ephemeral
•Combine with shade tolerant grasses and sedges.

Pennsylvania Sedge, *Carex pennsylvanica*

Seersucker Sedge, Carex plantaginea

Longbeak Sedge, *Carex sprengelii*

The following species show potential

Woodland
- Carex rosea
- Carex shortii
- Carex squarrosa

Dry to Wet Soils
- Carex brevior
- Carex bicknellii

Wet or Saturated Soils
- Carex nebraskensis
- Carex crinata

Nebraska Statewide Arboretum
arboretum.unl.edu

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…enriching lives through the beauty and wonder of plants.

Bob Henrickson
402.472.7855
rhenrickson2@unl.edu