SEEDS OF DIVERSITY

Iowa DNR Prairie Resource Center **Fall 2011**

The Battle Against Grass Dominance in the Prairie

By Bill Johnson

When can too much of a good thing, be a bad thing in the prairie? A common problem for land managers is having too much native grass in their diverse native prairie reconstructions. Native grasses establish quicker and easier than the forb component in a prairie reconstruction and often force out the forbs in the early establishment period. The taller native grasses, Big bluestem and Indian grass, are especially aggressive competitors with native forbs and out fight them in the battle for space and sunlight in the establishment phase of a prairie.

"The grasses are overwhelming my wildflowers!" I often hear from land managers.

There are many ways to battle grass domination in a prairie; practices such as grazing, haying, adding forb species that are parasitic to grass, and reducing the grass in the initial reconstruction. All of these management practices can work, but may not be feasible for all situations. This past spring the PRC staff embarked

In this edition:

on a different grass control measure, a grass specific herbicide. The idea was not to eliminate all grass, but control and reduce it to allow forb dominance.

Here is a step by step approach of how we controlled the native grass dominance with a herbicide application in an 8 year old native reconstruction. First, the area was burned, somewhat late this year – April 26th. Many of the forbs had emerged and the Common mountain mint was two to six inches tall. The

Prairie Reconstruction 5/26 one week post spray-Very little visible effects.

next step was to determine when the native grass was actively growing, but still short, to get the best control with the least amount of herbicide. This year that date was May 23rd. The best date for application will vary from year to year and geographic location. We applied the herbicide when the warm season native grass was about four to six inches in height. Subsequently, the rate of herbicide was determined and applied. We decided to go somewhat middle-of-the-road for controlling perennial grasses. We used 10 ounces of Select 2E per acre plus activator, the herbicide label called for 8-16 ounces per acre. There are many other grass specific herbicides available, we are not promoting this specific grass herbicide over other brands, but wanted to give the specifics of our experiment. Again, we did not want to eliminate all the grass, but reduce the amount of grass in the stand and stress the grass that remained. Finally boundaries were marked and it was time to wait to see the results.

For a side benefit, grass specific herbicides can be used to control some of the non-native cool season grasses such as Reed's canary grass, Tall fescue or Smooth brome without hurting the native forb com-

Sprayed area June 9th-Grasses turning brown.

ponent. Application time may need to be adjusted for these grasses because they are cool season grasses and the herbicide works best when the grass is actively growing.

Cost for grass specific herbicide was approximately $8.00 per acre. We applied the herbicide ourselves so this does not include any application costs.

Grass stunted but not dead 7/6/11

Results of the herbicide application were successful as seen in the photos. Many of the grasses were killed, but some survived and had their vigor reduced. The forb component definitely was enhanced by the reduction in grass; there were many more flowering plants and the density of forbs seemed to be enhanced also. This is just the first year of this experimental tool. Longer grass control may need to be observed before making this a feasible management tool.

Prairie management has several tools to address the needs of the prairie. Hopefully, this is a new tool that can be added to your toolbox for managing your prairie in the future. Please stop by the Prairie Resource Center and see the experiment in progress next growing season.

Sprayed area to the left unsprayed area right. July 19,2011
Sprayed area has some grass, but short and not flowering.

September 9, 2011 sprayed area left unsprayed area right.

Reed Canary Grass—

Nemesis or Native Plant Community Member

By Carl Kurtz

The following description was from my paper presented at the North American Prairie conference some years back and gives a perspective on its origin.

Native and Eurasian varieties of reed canary grass (Phalaris arundinacea) are found along water drainage's and in wetlands across the United States. Technically it is called a cyptogenic species, that is, its source origin is unknown. Historically, cultivation dates back to the mid-1700s in Northern Europe, while it has been planted in the US for forage and erosion control since the early 1900s. It is a tall cool-season (C3) grass which flowers in early June and drops abundant seed a week or so after flowering. It also spreads vegetatively by stout creeping rhizomes and can colonize up the sides of hills where the moisture gradient is favorable.

We have been working on the control of reed canary grass for more than 20 years and we have learned that removing it with herbicides is one thing, but keeping at bay is another. I am sure many land managers can relate a similar story.

Our success has come about not by the elimination of reed canary grass, but by integrating it with a very diverse mixture of wetland species to provide long-term competition. Reed canary grass then assumes its role as a component in the community not a dominant species, which forms a dreaded monoculture.

Reed canary grass in October after a mild frost.

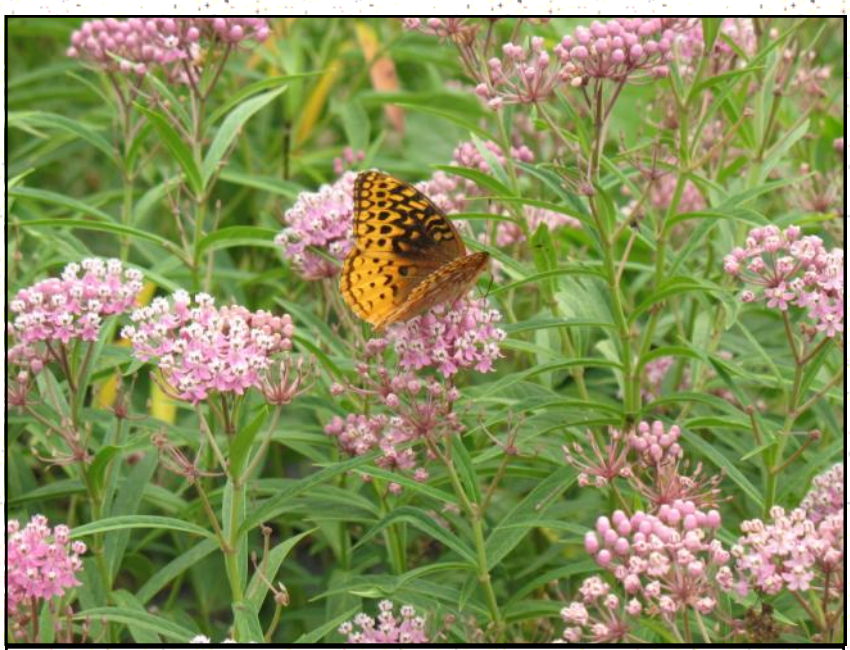
Before planting your wetland species one should make every effort to kill the growing root systems of reed canary grass. Round-up is very effective, but works best when applied in the late fall when the plants are storing food reserves in the rhizomes. If it has remnant prairie species one needs to mow the area to be treated in October after they have gone into a state dormancy. Reed canary grass will then green up as well other cool season grasses. The herbicide effect will not be readily

Giant swallowtail nectaring on Ironweed.

apparent until the following spring due to cool temperatures, but we have used this method on a number of other invasive species such as red clover, crown vetch, Canada thistles, smooth Brome, and fescue nearly every year for the past 20 years with very good results. Normally we do this herbicide application in early to mid-November. One just needs to keep in mind this cannot be done on a new prairie planting which is being mowed during the establishment phase, as the growing prairie species will be killed because they do not go dormant if mowed off during the growing season.

During the first several growing seasons after planting a native prairie mixture you are very likely to see a re-growth of reed canary grass from seed on the ground. We have often used Poast or Select to set it back this new growth. Both are grass herbicides designed for cool season grasses in soybeans and were used extensively before Round-up Ready soybeans were on the market. The main control effect helps wetland prairie species get started and should be applied in late spring when reed canary grass is about 10 inches in height.

While a diverse wetland species mix is the main ingredient for success, good follow-up management for several years is also critical. We have also found that spring burns tend to help the vigor of the prairie species and aid in the recruitment of new plants. Our best examples of success have been in areas where fire has been used nearly every year for more than 10 years.



Great spangled fritillary nectaring on Swamp milkweed.

The following plants provide some of the best competition for reed canary grass. Cord grass, saw-tooth sunflowers, green and river bulrush, cup plant, water hemlock, swamp milkweed, spike rushes, marsh marigolds, ironweed and cattails.

Species spotlight: New Jersey Tea

By Jinelle Kubly

Ceanothus americanus (New Jersey tea) is a member of the buckthorn family (Rhamnaceae) and is common prairie shrub found throughout Iowa in a variety prairie types and even oak savannas. Most commonly New Jersey tea originates in prairies that have full sun and well drained soils.

New Jersey tea is a small upright, bushy shrub that can grow up to 3 feet tall. The toothed, alternate leaves have a grayish-green color. Look for white, oblong clusters of flowers blooming from late May to June. Blackish brown fruits (seed) form in July in the form of a 3 piece capsule. Seed is dispersed from the capsules by an explosive discharge during the heat of August and September, similar to exploding kernels of popcorn. This is why New Jersey tea tends to establish in patches in a prairie. New Jersey tea has the added benefit of adding nitrogen to the soil similar to legume species.

New Jersey tea was used as a tea substitute by colonists during the boycott of English exported tea during the Revolutionary War. It is also caffeine free! Native Americans used this plant to treat many common aliments, such as colds, bowel trouble, eye problems, and high blood pressure.

This perennial native shrub is long lasting and a beautiful edition to the landscape around your home or as a part of a prairie reconstruction. Look for this prairie gem in your next visit to the prairie.