SEEDS OF DIVERSITY

Iowa DNR Prairie Resource Center **November 2012**

Species Spotlight: Showy goldenrod (*Solidago speciosa)*

By: Ryan Schmidt

Showy goldenrod, *Solidaga speciosa*, is an eye-catching forb native to prairie ecosystems. Although there are several species of goldenrods, many claim that Showy Goldenrod is the most appealing and showiest of them all. This unique prairie plant boasts gorgeous late blooming flowers and fall foliage.

Showy goldenrod exhibits a cluster of unbranched stems that can grow to a height of 4 feet. The leaves of this goldenrod are elliptical in shape and slightly toothed. They also gradually grow smaller from the bottom of the plant to the top. This tallgrass prairie plant has beautiful yellow flowers at the top of each stem. These flowers occur in an elongated or cylindrical cluster. The typical flowering period

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Showy goldenrod flowering in late August-above
Showy goldenrod after frost in October showing its fall colors-below

for showy goldenrod is from late August to early October, with fruiting occurring as early as mid September in certain individuals. Fruiting seeds have fuzzy, white awns attached to each seed that allow for dispersal though the air as winds begin to blow. As fruiting occurs from mid to late fall, be sure to keep an eye out for the beautiful red to brownish fall color of the foliage. Whether you find this plant in its flowering state or in fall colors, you will surely appreciate its appealing looks.

Showy goldenrod is found most commonly in the tallgrass prairie region and the eastern United States, but also occurs outside of this range in surrounding prairies, savannas, and even open woodlands. Solidago speciosa is most prominent in dry to mesic prairies across its range.

With this being said, as late summer and the changing fall season begins to approach, keep a careful eye out for the stunning allure of Showy Goldenrod as you explore the fascinating wonders of the tallgrass prairie.

Monarch Joint Venture + PRC = Benefits for Monarchs and Wildlife

by: Bill Johnson

Growing up I got the "bug" for exploring the outdoors from many early childhood experiences. One of those experiences came from catching Monarch caterpillars, feeding them milkweed leaves, and watching them turn into beautiful butterflies. Did you learn about the Monarch butterfly while you were growing up at home or elementary school? Maybe you read about the critical wintering habitat in Mexico in the Weekly Reader, or learned about the four life stages of the Monarch - egg, larvae, pupae, and adult in Science class, or maybe learned about how the Viceroy imitates the Monarch for protection. The Monarch is a key formative occurrence in the outdoor experiences of many kids. I know it was for me and it was one of the early learning experiences that helped develop my interests in the outdoors.

Something I did not know growing up was that Iowa's land is critical habitat for the Monarch butterfly. Not only does Iowa produce Monarchs on the many milkweed species, but it is critical migration habitat for them also. Iowa DNR Prairie Resource Center (PRC) and the Monarch Joint Venture have partnered to increase Monarch Butterfly habitat on Iowa's public lands. The PRC partnership with the Monarch Joint Venture has allowed extra dollars,

$13,500 in 2011-12 and $15,000 in 2012-13, to purchase Asclepias species (milkweed) seed for prairie reconstruction on Iowa DNR public lands.

Why is the milkweed seed important? Milkweed is the host plant for Monarch larvae to feed on while they are caterpillars. Their flowers are key nectar sources for Monarchs as well as many other pollinators and the habitat they provide is beneficial to many wildlife species. Iowa is an important state when it comes to Monarch habitat. Not only does Iowa produce Monarchs, but it also is a key migration route for many of the butterflies in the spring and fall.

The PRC has inconsistent production of many milkweed species. Weather, pests, and disease have taken their toll on seed production through the years; we have boom years with a lot of seed and then years with very little milkweed species seed. Through this partnership we hope to be able to ensure the supply of multiple species of milkweed along with the other wildflowers for state parks and wildlife areas across the state. This added diversity will be beneficial in providing crucial host and nectar plants for Monarch butterflies as well as excellent habitat for other species of wildlife. This partnership is a win for Monarchs and wildlife with the addition of Asclepias seed to the supply of seed for Iowa's public land.

How big of an impact is $12,000 of milkweed seed? Let's put $12,000 in terms of seed. Milkweed seed can cost $200-$800 per pound: about a $500 average. Therefore, $12000 can purchase about 24 pounds of milkweed seed. Milkweed has on average about 70,000 seeds per pound. That turns into about 1.68 million milkweed seeds getting spread across public land in Iowa. Annually the PRC provides seed for 1500 – 2500 acres of prairie reconstruction annually. So if there is

2000 acres or prairie reconstructed in 2013, there will be 840 seeds per acre. A big impact!

In 2012 Liatris species will also be purchased to provide nectar sources for Monarchs and other pollinators. This is because Iowa is on the Monarch's migration corridor south to Mexico. Liatris species are heavily utilized by both locally produced Monarchs as well as Monarchs migrating through the state.

Catching a Monarch caterpillar as a kid and watching it turn into a butterfly is an experience I take for granted that all kids have the same opportunity. Take a child out to a prairie next summer and help them catch the "bug" for the outdoors. You never know where it may lead them in life. They may not become a biologist, but it will trigger an appreciation for the many wonders of the outdoors.

2012 - The Summer of Prairie

by Bill Johnson

The summer of 2012 will be a summer that will be remembered by many people because of the hot and dry conditions experienced across the state. Prairie showed its resilience to the hot dry summer weather, but that does not mean that some species were not affected by the weather. In fact, prairie is adapted to changing weather or management and that is what makes prairie resilient. Some prairie species really showed their resilience this summer. After several wet years in succession, the species that like it hot and dry; came out in full glory this year. Other species that like the moisture of years past did not do as well. Think about this in terms of prairie management. A prairie will not

New England aster had 2 blooming periods with this past summers warm dry weather—July/August and September/October.

look the same from year to year because it is influenced by not only the management of the prairie, but the weather conditions that occur during the season. A mistake of many prairie managers is trying to make the prairie look the same year after year. There seems to be some species that thrive and some species that decline due to the management or weather conditions. That is why managers need to have a diversity of management schemes, to keep each species thriving from time to time.

I was often asked how the weather affected harvest of the prairie seed. In some cases it drastically affected seed production, both negatively and positively. Did you notice all the Compass plant and Butterfly milkweed that was flowering in 2012? Tap rooted species like Compass plant and Butterfly milkweed exploded in the hot and dry conditions and did very well. We had one Butterfly milkweed plant that had over 40 pods on it; in 2011 we did not have 40 pods in the whole plot of 1000 plants. In contrast, some species such as Gray headed coneflower, Prairie blazing star, and Purple prairie clover were species that definitely were reduced because of the hot dry conditions. These species were all blooming at the hottest and driest portion of the year. Many of the late summer species such as Indian grass, goldenrods, and asters just waited for the late summer rain and then put up their flowers for the fall show and showed few effects of the drought. Early spring species were generally not affected by the heat or drought; many of them had their seed produced before the extreme weather really got going. Over all, seed production was good for some species and was poor for others. Which is not unlike any other year; a diverse prairie is resilient and has species that will thrive under hot, dry, wet, cold growing seasons.

Two interesting prairie management learning experiences happened for me this summer. The first was 4th of July weekend; there was a small wildfire on the gun range prairie (remnant) at Brushy Creek. It was fascinating to see how the native grasses returned to green within a couple of weeks of the fire. Purple prairie clover even tried to re-flower after being burned to ground level by the fire. Many of the trees and brush were severely negatively impacted by the summer fire. The sumac made a late attempt to re-

emerge from that scorched site. It will be interesting to see the long term effects that that fire had on the site. It might even be a negative effect long term on the native grass component. Did it have to use up root reserves to resprout, only to have the hot dry conditions persist and not be able to replenish its reserves? Only time will tell the whole story.

Anderson Prairie State Preserve near Estherville was another prairie management learning experience. Anderson Prairie managers have struggled controlling the Smooth brome on the site for years. This year a late spring burn was utilized for management of the site. Wow, what a change! In 2011 I was at Anderson Prairie for the Iowa Prairie Conference tour; the prairie was Smooth brome dominated with native wildflowers sprinkled around the brome, especially on the steep hillsides. 2012 a late spring fire was the first management tool used against the Smooth brome and the hot dry weather kept the brome at bay. It was hard to believe it was the same prairie. The combination effect of the late fire and hot dry weather will have beneficial results for a positive the long term condition of the prairie. It would be wonderful if managers had a crystal ball that told them when summer was going to be hot and dry. Smooth brome control would be a lot easier.

When I introduce a group touring our facility I like to include a prairie walk of a remnant or reconstructed prairie as part of the tour. I tell them "One of the neat things about prairie is you can come back every two weeks and there will be new species blooming throughout the growing season". I need to add, you can come next year, and there will be new species flourishing as prairie management and weather changes. Prairie is ever changing and will not look the same from week to week, month to month, or year to year. After all, it has been the dominant ecosystem for hundreds of years in Iowa and we all know how the weather can change in Iowa.