SEEDS OF DIVERSITY

Iowa DNR Prairie Seed Harvest Team **December 2005**

A HARVEST WRAP-UP

The 2005 fall combine harvest has officially come to an end. All harvest equipment has returned home and is being prepped for winter. All in all, 2005 was a very successful year. Approximately 60,000 pounds of bulk seed were collected from 380 acres. All of this seed is of Iowa origin and can be North, Central, and South zone identified.

Fall seed orders have been arriving and so far they total nearly 800 acres. Seed for these orders is now being prepared, since the cleaning and processing portion of our program began the first of November. We will let everyone know when their orders are ready for pickup. Fall dormant seeding or frost seeding can be accomplished anytime between December 1st and March 31st of the following spring, weather permitting.

Spring seed orders need to be in by **January 1, 2006** to insure all of our wildlife needs are met. The Parks section is also placing some seed orders so there may be a need for prioritization. All wildlife needs come first.

We would like to thank personnel from the Big Sioux, Ingham, Bays Branch, Saylorville Wildlife Units, and Brushy Creek State Recreation Area for all they have done to help make this a successful year of combining. These people helped line up harvest sites, provided great hospitality while we were away from home, and enough manpower to keep our second machine operating locally while we were away. Great teamwork gains even greater results and the really cool thing is that every Iowa citizen WINS, especially the outdoor enthusiast.

The 2005 forb plot harvest has also come to an end. Harvest of gardens in all zones/Rockwell City, Ft. Dodge, Brushy Creek, Adel and Montrose was completed by October 31st. Following harvest, all dormant vegetation was clipped and removed from the sites. Removal of debris will assist us with spring soil preparations and possibly help reduce development of mildew/fungal problems should spring turn be wet.

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Since seed bags were piled to the rafters waiting to be cleaned, the cleaning operation has started. Up to 70 species will be available depending on the zone and prioritization. We should be able to clean enough seed to distribute for fall orders without any concern.

We would like to thank the Dallas County Integrated Roadside Vegetative Management (IRVM) team, Dallas County Conservation Board (DCCB), volunteer Renae Peters, North Central Correctional Facility (NCCF), Fort Dodge Correctional Facility, Iowa State Penitentiary Farm #3, and Brushy Creek State Recreation Area for help with planting, weeding, maintenance, and harvest of nearly 10 acres of wildflower gardens.

We hope that everyone has a great winter, happy healthy holidays, and a successful New Year!

Your Prairie Seed Harvest Team

A VIEW FROM THE COMBINE: PRAIRES AND WILDLIFE

Jessica Bockenstedt and MJ Hatfield, AmeriCorps members

By Jessica Bockenstedt

While driving the combine this past harvest season I had the opportunity to learn how to operate a combine and a chance to learn a whole lot more about wildlife. I would have never thought that I would be driving a combine until after I started with the Prairie Seed Harvest Team. This was my first harvest season working 5 months as a temporary and now I'm currently an AmeriCorps member. After a few lessons on the combine at Spirit Lake from Tech 2 Eliot LaFollette, I then had the chance to teach MJ Hatfield, also an AmeriCorps member with the Prairie Seed Harvest Team how to drive the combine at Brushy Creek. While combining the several prairies at Brushy Creek growing Big and Little bluestem, Indian grass, and mixed forbs, there was a lot more to observe than the seed being harvested. The fragrance of a prairie is an important characteristic that I could smell while driving the combine. Harvesting patches of Wild bergamot, Mountain mint, and Prairie sage filled the combine with their distinct aromas letting me know which species were being harvested without having to visually see the prairie plants.

The wildlife that is available at a blink of an eye is incredible. I noticed Ring-necked pheasants like to run in the combine tire tracks, then flush. Similarly, the rodents and rabbits dashed before my eyes. Sightings of Sora and White-tailed deer also frequently occurred. Of course, grassland birds flushed and flew before the combine only to have to fly up again to get out of the way. Harvesting in Spirit Lake this fall, Eliot and I observed two hummingbirds fluttering around at Dugout Creek while combining a Big bluestem field.

In a mixed seeding of forbs at Brushy Creek State Recreation Area, MJ and I observed a mixture of approximately 100 Barn and Tree swallows that were diving and swooping to catch insects the combine was stirring up. Occasionally insects such as moths would land on the windshield in the middle of the swallow feeding frenzy. Being in the combine illustrated the existence of invertebrates in the prairie. Invertebrates are an important source of food for grassland and game birds and contribute to the balance of a prairie. In the monoculture grass fields such as Big bluestem that MJ and I harvested, we saw half as many swallows as compared to the mixed forb field.

Does this mean that there are more invertebrates in the mixed forb field or was it just a coincidence? Being able to make these observations is something worthwhile about working outdoors and might also aid in the understanding of the functions of prairie habitat.

The visibility of wildlife utilizing prairies that we had harvested throughout the season reaffirms the importance of future habitats needed for feeding, nesting, brood rearing, and winter cover. The Prairie Seed Harvest Team is promoting diversified prairies for future wildlife habitat by harvesting prairie seed for the public interest.

NECTAR SECRETS OF PARTRIDGE PEA

Ant at the nectary of Partridge Pea , Photo by Harlan Ratcliff

By Harlan Ratcliff

A recent book claims to have found the average American. His name is Bob and he lives in New Jersey. Since he lives within 100 miles of an ocean he lives in an average location. Like the average American, he is between 5 and 6 feet tall and lives within a 20-minute drive to a Wal-Mart, and never sings in the shower.

Is there an "average" prairie plant? If there is, it is probably a perennial, has long grass-like leaves, and disperses its seeds in the wind.

By almost any measure Partridge pea, *Chamaecrista fasciculata*, is not an average prairie plant. Although it thrives in prairies, it is not perennial, but instead an annual plant. Its leaves are finely divided into small leaflets that fold together each night. The seeds are found in a small pea-like or green bean-like pod that uncurls to reveal little, black, square Sen Sen-like seeds. Partridge pea seeds are dispersed with a explosion as the seed pod dries and splits. With a sudden burst it spews seed into the surroundings.

But, the most unusual feature of the Partridge pea is a small cup-like structure called an extra floral nectary which can be found at the base of each leaf. This structure seems to function as an automatic feeder for ants. Little drops of sugary liquid (nectar) flow from the structure, and when ants discover this food source, they hang around on the plant for more. If they encounter other insects on the plant, they attack them—either as a territorial response or to kill and eat them. This benefits the plant because other insects might be there to eat the partridge pea.

Usually when you look closely at Partridge pea plants you will see ants on the stems. One plant can have from one to half a dozen or more ants. If you watch them long enough, you will see them visit the nectaries.

Sometimes the nectar does not seem to be flowing—in that case there will be no ants on the plants. Other times the nectar is flowing at a very high rate and nectaries are visited by a huge variety of insects—beetles, flies, bees, etc. Ants may be absent or just overwhelmed by the large volume of traffic.

I have watched flies take nectar from plants when ants are very active. In that case, the fly seems to be aware of the ant and stays on an area of the plant away from the ants, then sneaks in to a nectary that is not being guarded.

At least one common butterfly uses the Partridge pea as a caterpillar host plant—the little yellow, *Eurema lisa*. The caterpillar must have an evasion tactic around the defense offered by ants. What that is, I don't know.

So the next time you see Partridge pea in a prairie look for the little creatures on it. They have a story to tell.

Partridge pea nectary, Photo by Harlan Ratcliff

WILD SENNA

Wild senna, *Cassia marilandica*, growing at our Adel production plot

By Doug Sheeley, Dallas County Roadside Biologist

Wild senna (*Cassia marilandica*) is the even "less-average" cousin to partridge pea. Some have described Senna as partridge pea on steroids, which it resembles in form and color - but not size, occasionally reaching six feet in height. A perennial species, it is listed as infrequent to rare in Iowa (Eilers and Roosa, 1994). It prefers open woods and moist soils and has suffered due to development and successional (and perhaps hydrological) changes in our landscape. Like its cousin, Senna has nectaries and large seeds that can provide food for birds and other wildlife (hence the name, Partridge pea). Senna has well-known purgative properties and Asian varieties are still used in commercial laxatives.