

siosa

SOUTHERN IOWA OAK SAVANNA ALLIANCE

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***SAVE THE DATE - October 29th Burn Workshop
10 a.m. - 2 p.m. (lunch will be provided). Location: T.B.D.***

MESSAGE FROM THE SIOSA PRESIDENT

Just a quick update on what is happening with SIOSA as the fall season begins. The June meeting was held at Kobville. We walked through much of the work that has been done there by Mark and Rich Erke. Very impressive! Looks like a good place for a fall burn workshop. Also attending the meeting was Rollie Henkes, the editor of Woodlands and Prairie magazine. It was good to talk with him and hear his insight. If you haven't seen the magazine you can check it out at <http://www.woodlandsandprairies.com>.

In July and August we met back at the court house and Gregg gave us some great news about additional funding from the Partners program. Our amount started at \$75,000 for 2011/2012, then via some unspent funds in other areas, ended up at \$195,000. Nice huh? There are 10 projects in the works to spend \$50,000 and another nine planned to spend \$45,000. So that leaves us \$100,000 to spend by December 2012. With all the budget cut talk in Washington, we need to make good use of these funds as lean times are probably ahead.

Our October 20th meeting at the Decatur County Courthouse will start at 7:00 p.m. We will be discussing the above projects, our REAP - CEP grant, and the fall burn workshop which will be held October 29th at 10 a.m. Please join us if you can.

See you in the woods...

Casey

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INSECT GALLS ON TREES AND SHRUBS

PREPARED BY M. SHOUR, L. JESSE AND
D. LEWIS, IOWA STATE UNIVERSITY EXTENSION ENTOMOLOGISTS

Galls are abnormal growths or swellings of plant tissue caused by the attack of a living organism. Insects, mites, nematodes, bacteria, fungi, and viruses produce these plant deformities. Galls also can form as a result of mechanical injury. This [article] deals only with tree and shrub galls caused by insects and mites.

There are hundreds of unique galls caused by insects and mites. They are formed on a variety of plants and in a broad range of sizes, shapes, colors and textures. Galls may be found on leaves, stems, twigs, branches, trunks, and roots (Table 1). Some galls are common and abundant and easily noticed. Others are rare or less conspicuous.

Insects or mites that cause galls to form are called gallmakers. Galls grow in response to either feeding by the gallmaker or as a result of egg laying on or within the plant tissue.

Galls grown to surround the tiny insects and mites that form them, providing some protection from adverse weather, predators, and parasites. In addition, the gall is a ready source of food for the gallmaker, rich in protein and carbohydrates.

The insect or mite develops and grows inside the gall during the summer and emerges as an adult either in the summer or the following spring. Each species of gallmaker causes its own distinctive gall that is different in appearance from galls caused by other species.

The nature of gall formation was not discovered until recent times, even though galls have been written about since the days of the Roman Empire. Galls are now believed to be caused by powerful plant-growth-regulation chemicals or other stimuli produced by the gallmaker. It is well known that galls form as a result of cell multiplication in meristematic (growing) tissue. Gall formation cannot take place after a leaf or stem has stopped growing.

DAMAGE

Most insect galls do not seriously affect the health and vigor of healthy, well-established trees and shrubs. Occasionally, a heavy gall infestation causes severe leaf or stem deformation and premature leaf drop. However, these annoyances usually do not cause long-term damage to the tree. Leaf galls may be especially aesthetically displeasing but they do not directly kill the plant. Twig galls may cause stem dieback that could bring about the demise of small trees.



Galls discovered during inspection of trees that are declining or dying are usually not the cause of the problem,

USE OF GALLS

Folk remedies from earlier times frequently included galls. Also, because the formation of galls was not understood, they were thought to be supernatural and possessed with future-telling powers. Dyes and inks have been obtained from galls over the past several centuries. In more recent times, galls have been used in the production of tannic acid. In certain instances, galls have been used as sources of food, probably because of their high starch and sugar content.

INSECT GALL CLASSIFICATION

In general, there are two types of galls: open and closed. Open galls are produced by insects with piercing, sucking mouthparts - aphids, psyllids, and scales as well as mites. These galls have an opening through which the gallmakers escape. Gallmaker reproduction occurs within the open galls.

Closed galls are made by insects with chewing mouthparts - larvae of beetles, flies, wasps, and moths. None of these gallmakers have chewing mouthparts, they are able to chew an opening to the outside upon completion of development.

GALL COMMUNITIES

Galls may contain complex communities of many different organisms in addition to the one that caused the gall to form.

There may be parasitoids in the larva or pupa of the insect that caused the gall and the primary parasite may in turn have hyperparasites. Some mites, wasps, flies, beetles, and even small caterpillars may colonize developed galls, living as lodgers and eating the food provided by the gall. It is never safe to assume that the first insect to emerge from a gall is the one that caused the formation of the gall.

CONTROL OF GALLS

Because most galls do not seriously affect trees, controls are not usually necessary. Also, galls cannot be “cured” after that have formed and spraying the galls does not make them go away.

Preventative treatments must be applied before the galls form and properly timed to coincide with the development of the plant and the attack by the gallmaker. Although treatment may be effective, it is usually not practical. The appropriate time to treat will vary considerably from year to year and from place to place, making good control more a matter of luck than skill. Specific preventative treatments are outlined in Table 1.

Contact insecticides and miticides can prevent galls by killing the adult stage of the gallmaker. Systemic insecticides, both foliar and soil applied, theoretically should provide good gall control. However, these products will not cure galls that have already formed, and their ability to prevent gall formation also depends on accurate timing.

See SIOSA.org blog for a description of common galls and gallmakers

MOST PLANT SPECIES IMPORTANT IN VARIOUS AND VARYING ECOSYSTEMS: ISU Research

Article adapted from EurekaAlert.org

From the kinds that people sneeze at, to the kinds that have prickly seeds that stick to pant legs, there are many different types of plants in grasslands around the world.

According to a new analysis of plants in grassland ecosystems around the world, it turns out that most of those plant species are important.

Brian Wilsey, associate professor, and Stanley Harpole, assistant professor, both in Iowa State University's Department of Ecology, Evolution and Organismal Biology, are authors of a study on plant diversity published in today's issue of the journal *Nature*. The study's lead author, Forest Isbell, is a former graduate student of Wilsey who now works at McGill University, Canada.

Their findings show that most species promoted ecosystem functioning in at least some years, sites and environmental conditions. In all, 84 percent of the grassland species are important to the ecosystem at some point.

Prior to this multi-year, multi-context research, Wilsey said that the argument for diversity was more difficult.

"In any single context, only about 27 percent of plant species were seen as important," he said.

Since previous research had shown that such a small number of plant species were important to ecosystem processes, there was less reason to be concerned if grasslands lost



E - N E W S L E T T E R



Brian Wilsey, associate professor, in Iowa State University's Department of Ecology, Evolution and Organismal Biology

different species and diversity lessened, according to Wilsey. Now, the value of diversity is very apparent.

The species needed to provide one function during multiple years were not the same as those needed to provide multiple functions within one year, the report said.

"If you look at any one year at one site, you might say that species A or species B are really important," said Wilsey. "But what we found was that if you run the analysis over several years, sites or environmental-change contexts, many different species become important. This study really brought everything together."

Isbell and other authors looked at data from 17 grassland studies around the world, including two done in Iowa's Loess Hills at the Western Research Farm and another done in Texas by Wilsey's group.

"Under multiple contexts, many different plant species become really important," Wilsey added. "For instance, certain plant species are important on east-facing slopes and others are important on west-facing slopes. Some plant species are important on grazing lands because they help grasslands recover quickly.

Some plants are vital for nitrogen uptake, which is important because it keeps nitrogen out of water bodies." This study may have further value as researchers look to the future.

As climates change, Wilsey said, some plants may become more important because levels of precipitation and atmospheric CO₂ change.

"The results suggest that many more species are needed than previously thought for maintaining ecosystem services in a changing world," he added. "So this study suggests that it is crucial to keep as much diversity as we can."

SPECIES SPOT-LIGHT

Blazing Star

Scientific Name:

Liatris punctata

Common Names: Dotted Gayfeather, Gayfeather, Dotted Blazingstar, Dotted Button Snakeroot, Liatris



IDENTIFICATION Blazing star is a native, warm-season, perennial forb. It has one to several stems 4 to 32 inches (0.1-0.8 m) tall. The inflorescence is a dense rose-purple spike up to 12 inches (30 cm) long showing in later summer and autumn. The fruit is an ***achene**. The ***pappus** is persistent. The stems arise from an erect or weakly spreading thick, short rootstock elongated into a thickened taproot. The taproot is 4.25 to 16.4 feet (1.3-5 m) deep, with laterals at various levels. Blazing star develops rhizomes. Interestingly, the plant develops slowly and is very long lived. Ring counts in root crowns showed plant ages greater than 35 years!

DISTRIBUTION/SITE CHARACTERISTICS Blazing star occurs from Alberta south to New Mexico and Mexico, east to Manitoba and Michigan, and south to Arkansas. The plant grows in a variety of locations across the country from glades, bald knobs, meadows, dry upland prairies, and savanna. *Prairie* blazing star (*Liatris pycnostachya*) is found throughout the tall grass prairie biome, often in dense stands on damp prairies and open bottomlands.

WILDLIFE USE Domestic livestock graze blazing star especially when the plant is young. Other wildlife that feed on blazing star: rocky Mountain elk; mule deer; white-tailed deer; pronghorn; upland game birds; waterfowl; and rodents. Rodents tend to eat the plant root and sometimes feed on blazing star seeds. The flower of the blazing star also attracts pollinator species.

HUMAN USE Blazing star is used for prairie rehabilitation. In a study performed in North Dakota to evaluate their adaptability in “mine spoil” reclamation, Blazing star had an exceptionally good seedling emergence and subsequent growth from direct seeding was described as “vigorous”. Blazing star is also used as a floral decoration and like many other wildflowers, the root of the blazing star was used by American Indians for food.

FIRE EFFECTS Blazing star has good fire tolerance (especially with fast fire) because of their persistent rhizomes. It produces numerous, small, wind-dispersed seeds which can establish on burned sites. Fire also helps blazing star seedling establishment by removing deep litter. Seedlings tend to emerge earlier because of greater heat and light at the soil surface.

*Achene - Small, dry, one-seeded fruit that does not open to release the seed

*Pappus - Tuft of hairs on each seed that assists dispersal by the wind

FROM THE ARCHIVES: American Kestrel



There's one little "critter" I've been seeing a lot of lately. The American Kestrel, *Falco sparverius*, can frequently be seen perched on power poles and lines along roadsides waiting to swoop down in its prey. Unlike other raptors, the Kestrel prefers to catch its prey on the ground rather than in the air. Its prey consists mainly of grasshoppers, small birds (mostly house sparrows), and on rodents. You could call it a friend of the farmer!

Its former name "Sparrow Hawk" is somewhat misleading. The Kestrel is in fact a member of the falcon family, not the hawk family. It's Iowa's only resident member of the falcon family. Although the name sparrow hawk is misleading, it is also very descriptive of the bird. The American Kestrel is small; about the size of a bluejay. With a wingspan of 20" to 24" and a length of 9" to 12" it's the smallest raptor in Iowa. Similar species, the Merlin and Peregrine Falcon are rare migrants. The Peregrine once nested in Iowa but, through loss of habitat, it is now only a rare migrant.

As mentioned earlier, the Kestrel is a jay-sized bird. Its markings are distinct and colorful. The adult male has blue-grey wings and head, buff breast and nape, and white underparts. It also has black markings behind the ears and has a mustache. These side ear markings resemble large eyes from above and is thought to discourage large hawks flying above. The female's head resembles the male but the females lack the blue wings and head spots. Both have a rusty tail and back.

The Kestrel's voice is a rapid, sharp, Killy-Killy-Killy. These birds are the most vocal of all the birds of prey. Kestrels lay 3-5 spotted eggs in tree holes. Kestrels do not build a nest in these cavities. If you've traveled I-35 in Decatur County you have probably seen the nest boxes for Kestrels on the back of some of the highway signs. These were put up by the County Conservation Board and the Iowa Conservation Commission to help Kestrels nest in Iowa. During nesting the male Kestrel will help with incubation. This is unusual among raptors.

Kestrels are found throughout North and South America. These birds nest throughout their entire range. Most winter where they but northern birds do migrate south.

Southern Iowa Oak Savanna Alliance Membership Form

Annual Membership Rates

Student Member \$10
Savanna Friend \$25
Supporting Member \$100
Sustaining Member \$250
Savanna Steward \$500

Name: _____

Email Address: _____

Home Address: _____

Phone Number (optional): _____

If you would like your contribution to specifically support one of the following SIOSA divisions/ services, please indicate which one:

- ▶ Habitat and Restoration
- ▶ Outreach and Education
- ▶ Annual Meeting
- ▶ Membership Recruiting

Print and mail the completed form with check or money order payable to SIOSA to:

SIOSA c/o Richard Hillyard
21654 295th Ave Leon, IA 50144

THANK YOU for your support!

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