E - Newsletter

IN THIS ISSUE...

siosa
SOUTHERN IOWA OAK SAVANNA ALLIANCE

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Message from the SIOSA President

Written by Casey Campbell

Welcome everyone. Looks like spring arrived early this year, can't say that's a bad thing!

We are headed for a busy few months, but let's start with the burn association meeting that took place in the early spring. Over forty landowners attended, what a great turnout! Shannon you did an awesome job, thank you! There was a group of roughly eight folks in attendance that are currently burning together. They really know how to make burning into a fun time. With everyone's help and participation it looks like a good start to a burn association. Now let's get out and burn together. Anyone have a catchy name for the group?

* * *

Do you know what the green glacier is?

At the burn association meeting, ISU wildlife biologist Ryan Harr, gave us a presentation on the slow but steady invasion of Eastern Red Cedar (juniper, a.k.a the green glacier) into our area. This is a serious issue. I don't remember the exact numbers, but the rate of takeover is astounding. Think about the land in your area, aren't there way more junipers in the fencerows and pastures now than there were just a few years ago? Thanks Ryan for the wake-up call. At least we have a reasonable solution: fire.

Prescribed burning is a great way to control the green glacier. One other interesting note, buffalo hate junipers! Thanks for the tip guys. Again thank you Shannon, Ryan, Gregg, and Jen for making this an informative morning for all of us.

OK, now let's talk about upcoming items. Please check our website, www.siosa.org, for all the details on future events. Our next monthly board meeting will be held June 21st at the Decatur County Courthouse in Leon. A Field Day will also be planned for the late summer, so please look for more information about that in the upcoming weeks. Like I said, a lot is going on. If you've never been to one of our meetings or events I would encourage you to check one out. If you have been, please come join us again. We need help stopping the green glacier!

Get out and burn. If you don't know how, get involved and we'll show you how.

Casey

Mild Winter Makes for an Active Restoration Season

Written by Gregg Pattison, USFWS

The mild fall and winter proved to be very timely in helping get many new projects started and for maintaining many of the projects that are several years in management. Fall conditions were ideal for burning and the conditions continued through much of the season. The conditions were also the best seen for many years for completing timber stand improvements and invasive tree removal. Dry conditions and a lack of snow helped keep contractors and landowners busy all winter. The early spring did bring some concerns with later spring burns, and the timber burn season was shortened by a couple weeks. Overall, the work completed helped to restore and maintain southern Iowa's treasure of high quality oak savanna and prairie habitats. If weather conditions hold through the summer, we should have a great season for nesting game and Neotropical migrant birds.

We generally look at the savanna restoration season as October – March. This year we did try one new method on a project site in Clarke County that extended our season a bit with some summer work. A method called "hack and squirt" was used to treat understory woody vegetation on about 37 acres. The site was overgrown primarily with iron wood. Travis Strable, owner of Adaptive Wildlife Management, contacted me with a proposal to use this method to try and complete some summer work, while not impacting the endangered Indiana bat or causing damage to oak trees – that might make them susceptible to disease. To use this method, the applicator uses a machete to "hack" the tree and open the cambium layer enough to "squirt" in some herbicide (tordon or 50% round-up). The results are not immediate on the site, but were very effective at killing the ironwood. The site has more sunlight to the floor now, more vegetation for burning and seems to have more vegetative biodiversity.

More opening will be completed on the site this fall to reduce the canopy closure by removing over story or suppressed trees such as ash, elm, hickory or overstocked oaks.

Through the restoration season, SIOSA funded or worked closely on 25 project sites in 8 counties totaling over 725 acres of habitat restoration. In addition, many of the projects that are under long-term management were burned by the landowners. Estimates of the total savanna and prairie acres burned on projects sites that SIOSA has had input are over 1,200 acres.

It was truly a good year for savanna restoration and the enthusiasm and excitement of landowners that I am working with continues to grow. The US Fish and Wildlife Service is committed to continuing the efforts in southern Iowa to expand and grow the program to help restore and maintain the heritage of prairies and oak savannas.

Save the Date!

Field tour planned for three project sites in the Stephens State Forest Bird Conservation Area at 1:00 p.m., Friday, June 8th. The tour will include a walk through a project area where two prescribed burns have been completed, a mid-story thinning and a canopy thinning.

Email admin@siosa.org for additional details

Pollinators and Roadsides: Managing Roadsides for Bees and Butterflies

Written by Jennifer Hopwood

Roadsides cover more than 10 million acres of land in the United States (Forman et al. 2003), and in some states, they are the largest holdings of public land. Roadsides offer valuable habitat because they are typically set aside from further development and because they stretch across the landscape, connecting remnant habitat patches and creating a linear refuge for wildlife. This is particularly true in agricultural regions, urban areas, and other highly modified landscapes, where roadsides may be the only semi-natural habitat remaining. With four acres of open space in the United States lost to development every minute (U.S. Forest Service 2006), roadsides are too important to be neglected in conservation planning. The abundance and diversity of insects and other invertebrates are key building blocks of the wildlife value of a site. They are a food source for birds, mammals, and other vertebrates and the services they provide maintain habitats on which these other animals rely. One such "ecosystem service" is pollination, a service that is central to the health of our environment. It is primarily provided by insects. Beetles, flies, wasps, moths, and butterflies all contribute to pollination but bees are considered to be the most important group of pollinators. Managing roadsides to support pollinators brings benefits for both local natural areas and adjacent farms. One of the key considerations is the presence of native plants. Roadsides with a rich diversity of native plants support more pollinators. Incorporating native plants into roadside management strategies will not only make these areas better for wildlife, but it can also promote motorist safety, reduce maintenance costs, and improve roadside aesthetics.

Importance of Pollinators

An estimated 60 to 80 percent of the world's quarter of a million species of flowering plants depend on animals—mostly insects—for pollination (Kremen et al. 2007). Focusing on agriculture, eighty-seven of the world's 124 most commonly cultivated crops are animal pollinated, and insect-pollinated forage plants such as alfalfa and clover provide feed for livestock. Roughly 35 percent of global crop production is dependent on pollination by animals (Klein et al. 2006). Pollinators also sustain the wildland plant communities that provide food and shelter for myriad other wildlife. Plant pollination by insects is essential to human health, global food webs, and protection of biodiversity. Pollinating insects are at the heart of a healthy environment. Studies in multiple parts of the world give cause for concern about declining pollinator populations. In the United States, the National Research Council (2007) reported noteworthy losses of both managed and wild pollinators. Habitat loss, pesticide use, diseases, parasites, and the spread of invasive species were all cited as major causes of these declines. In Europe, parallel declines of pollinator and flowering plant diversity have been documented in both Great Britain and the Netherlands (Biesmeijer et al. 2006). Threats to pollinator communities affect not only pollinators themselves but also natural ecosystems and agricultural productivity. In landscapes substantially altered by urbanization or agriculture, roadsides, hedgerows, and field edges can be particularly important for wildlife. These areas provide pollinators with places to forage for food and to nest, while also helping to link fragmented habitats.

Roadsides as Habitat

Roadsides have value as habitat for birds (Adams 1984), small mammals (Camp and Best 1994), amphibians and reptiles (Way 1977), and ants and beetles (Keals and Majer 1991; Vermeulen 1993). They also provide refuge for pollinators by supporting a diversity of wildflowers that provides nectar or pollen for all pollinators, as well as grasses and forbs that serve as cat-

erpillar host plants for butterflies and moths. In some cases, roadsides support plant communities that can no longer be found elsewhere (Forman et al. 2003; Noordijk et al. 2009). Roadsides offer nesting sites for bees, particularly ground-nesting bees because the soil is undisturbed compared to agricultural fields (Delaplane and Mayer 2000). Additionally, roadsides are protected from further development and promote connectivity between habitat fragments (Forman et al. 2003).

Natural History of Pollinators

In North America, most pollinators are insects: bees, flies, beetles, wasps, moths, and butterflies. Hummingbirds also pollinate some flowers, as do a couple of species of bats and a dove in the desert southwest. Pollinating insects have two basic habitat requirements: a source of food and a place to lay their eggs. Understanding which features in the landscape provide these resources is essential to maintaining or enhancing habitat for pollinators.

Nectar and Pollen Sources

Most flowers offer sugary nectar or nutritious pollen to attract floral visitors. The majority of flower visitors feed while at the flower. Bees are unusual because they provision nests for their offspring, so they not only feed but also gather and transport pollen, the major reason why they are particularly efficient and important pollinators. Pollinator habitat should have a diversity of flowers that bloom at different times to sustain a diverse group of pollinators throughout the growing season.

Sites for Nesting or Egg-Laying

Pollinating insects require a place to nest or to lay their eggs. Butterflies and moths generally lay their eggs on or next to the host plant upon which their caterpillars will feed. In contrast, bees create a nest in which they construct and supply a series of brood cells. Nearly 70 percent of bee species nest underground, digging slender tunnels off which they excavate brood cells

for their eggs. Most other bees choose to nest in wood tunnels, occupying existing holes in snags or chewing into the pithy center of stems, in which they create a linear series of partitioned cells. Some bees use materials such as mud, resin, leaf pieces, or flower petals to form the partitions (Linsley 1958). Bumble bees are social bees, forming their annual colony in a small cavity such as an abandoned mouse nest. Pollinator habitat should include a range of nesting substrates and materials to provide for the differing nesting requirements of pollinators.

Native Plants and Roadside Management

While roadside management in the United States differs from state to state, the primary goals remain the same: motorist safety, noxious weed prevention, and soil stabilization. In recent years, many states have incorporated native grasses and wildflowers into rights-of-way to

achieve these objectives. Often, techniques already in use can make a difference in the conservation of pollinators. Integrated Roadside Vegetation Management (IRVM) combines the planting of native vegetation with site-appropriate strategies to achieve cost-effective and more environmentally sustainable management of roadsides. As an alternative to intensive mowing and blanket pesticide spraying of roadsides, IVRM offers several significant advantages.

• Native grasses and flowers are best adapted to local conditions, and are able to tolerate drought or heat.
• An established diverse plant community provides the most stable cover for reducing soil erosion and keeping out weeds. For example, tallgrass prairie restoration can limit the invasion of noxious weeds, due to strong root development (Blumenthal et al. 2005).
• Native plants offer improved weed and soil erosion control, reducing the need to mow or to spray herbicides, and consequently also the costs.
• Native plants are less likely to encroach on land bordering rights-of-way, a common complaint about non-natives such as crownvetch (Securigera varia) and sericea lespedeza (Lespedeza cuneata).
• Native plant communities will reduce runoff in the spring and act as snow fences in the winter, trapping and preventing snow from blowing across roads.
• Native plantings are aesthetically pleasing. Native flowers and mowing regimes that limit mowing to a single swath along the road were found to be the most attractive to drivers in Minnesota (Dan Gullickson, Minnesota DOT, pers. comm.).
• Native plantings may offer educational opportunities, as they demonstrate how the wider landscape once looked.
• Native plant communities support more native wildlife than nonnative plant communities.

Benefits of Roadside Plantings to Pollinators

Seeding roadsides with native vegetation often increases the diversity of plants in the local area (Muguira and Thomas 1992; Forman et al. 2003) and may provide more abundant pollen and nectar sources compared to adjacent areas. Combined with the reduced need for pesticide spraying to control weeds when using native plantings, native roadsides offer a haven to pollinators and other wildlife.

Flowers

Research demonstrates the benefits to pollinators of having native wildflowers on roadsides. Working in Kansas, Hopwood (2008) found bees to be twice as abundant on roadsides supporting native plants compared with those dominated by nonnative grass and flowers; native roadsides also supported about 35 percent more bee species. Ries et al. (2001) compared butterflies on native prairie roadsides in Iowa with those on grassy or weedy roadsides. This work showed that habitat-sensitive butterfly species such as the regal fritillary (Speyeria idalia) and Delaware skipper (Anatrytone logan) were significantly more common in prairie roadsides. In Minnesota, butterflies were most abundant in filter strips between cropland and streams that were planted with tall and dense vegetation (Reeder et al. 2005). These findings are supported by European studies. In Finland, the number of butterflies on roadsides was most influenced by the abundance of nectar producing plants, while moths were most abundant in areas with tall vegetation (Saarinen et al. 2005). In Britain, work by Munguira and Thomas (1992) suggests that planting roadsides with native plants would increase the already high diversity of butterflies on roadsides.

Nest Sites

Many bees prefer to nest in sunny, bare patches of soil (Linsley 1958), like those found around the base of native bunch grasses such as big bluestem (Andropogon gerardii) and Indiangrass (Sorghastrum nutans). The research by Hopwood (2008) in Kansas found that ground-nesting bees were more common in roadsides with native plantings. Roadsides with a tight sod of brome or other nonnative cool season grasses, in contrast, had fewer ground-nesting bees. Many bumble bees nest underneath grass clumps (Svennson et al. 2000). In Britain,

roadsides have been identified as providing breeding habitat for 8 of the country's 17 species of bumble bees, as well as 25 of its 60 butterfly species (Way 1977).

Landscape Linkages
Given their linear structure, roadsides may serve as corridors for pollinators and other wildlife. In Iowa, Ries et al. (2001) found that habitat-sensitive butterflies were much less likely to leave a roadside planted with native vegetation, suggesting that for some butterflies, roadside restorations could serve as protective corridors through which pollinators could move in highly modified landscapes. For example, roadsides could become corridors for breeding monarch butterflies returning north from their overwintering grounds, because their caterpillars feed exclusively on milkweeds (Asclepias), which grow readily in roadsides and are sometimes included in reseeding mixes. These same roadsides can also be nectar corridors for monarchs making the long trip south in the fall.

Roadside Habitat Creation and Maintenance
With so many acres of land in roadsides and the obvious value of these lands for wildlife, it is clear that roadsides can be of great benefit to pollinators. Plant communities can be enhanced with native species and maintenance methods and schedules can be altered to reduce negative impacts. The principal considerations are the diversity of native plants, the availability of bee nest sites, the impact of mowing, and pesticide use.

Increasing Flower Diversity
As noted above, a diverse plant community will support a wider range of pollinator insects. When planning a project, determine the grasses and wildflowers best suited to the climate, soil type, and location of the site. With native prairie plantings, it is often tempting to increase the proportion of grass in the seed mix to keep costs down. However, Dickson and Busby (2009) demonstrated that reducing the density of grass seeds increases forb establishment. Seed mixes for roadside restorations should include flowers with differing but overlapping bloom times, to provide pollinators with continuous floral resources. A rule of thumb is that a planting mix should contain at least three species that bloom in each season from spring to fall. Planting a range of wildflowers of varying colors and shapes will benefit more pollinator species. Bees do not easily see red objects, so mainly visit blue, white, yellow, and purple flowers. Of the other flower-visiting insects, butterflies tend to visit orange, red, yellow and purple species, and hover flies go to flowers of white and yellow. Hummingbirds, the only non-insect pollinators in most of North America, are drawn to red flowers in particular. Floral shape also influences which pollinators visit which flowers; the various body sizes and tongue lengths of pollinators are adapted to certain sizes and shapes of bloom. Many perennial flower species take several years to establish and begin to bloom, so consider including annuals in seed mixes. Annuals rapidly establish and offer pollinators nectar and pollen right away, while helping to block weeds during establishment of longer-lived species.

Providing Nest Sites

Bees that nest in the ground often prefer to dig their nests in patches of exposed earth, and while some species prefer sunny exposed slopes, others prefer level ground (Linsley 1958). Roadsides with trenches or ditches may provide more diverse locations for ground nesters. Native bunch grasses will stabilize ground while offering nesting resources to native bees: patches of bare earth for ground-nesting bees, and clumps under which bumble bees may nest. To encourage wood tunnel nesting bees within roadsides, consider leaving patches of native shrubs in areas furthest from the road itself. While butterflies do not build nests, they do require the correct plants for their caterpillars to eat. In addition, they often overwinter in leaf litter or under dead vegetation, which should be left where possible.

Avoid Using Pesticides

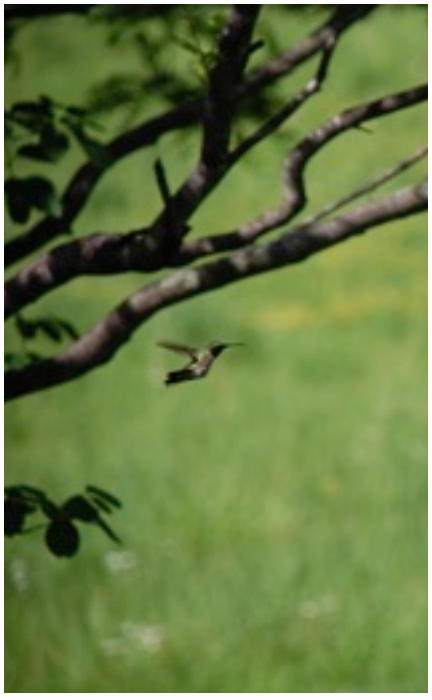
Pesticides can kill bees, butterflies, and other pollinating insects. The impact of pesticides on pollinators can be lethal or non lethal, fast–acting or delayed, limited to insects in the area sprayed or—as with bees—transferred to offspring in the nest. Foraging pollinators are poisoned by pesticides when they absorb the toxins through the outer “skin” that forms their exoskeleton, drink toxin–tainted nectar, or gather pesticide–covered pollen or micro–encapsulated pesticides. Lower doses of pesticides may not kill pollinators but can affect their behavior. Bees that are exposed while foraging may have trouble navigating their way back to the nest, or they may simply be unable to fly. Sublethal doses—such as those that result from toxins brought into a nest along with nectar and pollen—may reduce egg–laying or stall the larval growth. Wherever possible, avoid using pesticides. Where their use is unavoidable:

• Use a formulation that will offer the least threat (liquids are better than dusts) and apply in the lowest concentration possible.

• Avoid micro–encapsulated products: bees mistake it for pollen and will collect it to take back to the nest.
• Spot treat invasive plants to avoid killing non-target species. Avoid broadcast applications, which may destroy large numbers of beneficial plants.
• Choose equipment such as hand sprayers, which will minimize drift onto adjacent plants that may be in bloom—and therefore attracting bees and butterflies— even when flowers in the treatment area are not.
• Apply pesticides only when pollinators are inactive, such as at night or during those seasons when there are no flowers.

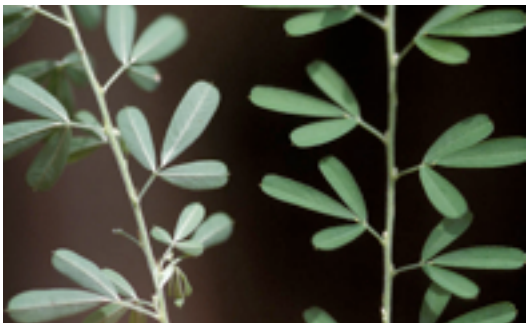
This article is an excerpt from an online article found at: http://www.xerces.org/wp-content/uploads/2010/05/roadside-guidelines_xerces-society1.pdf

Hopwood, Jennifer. "Pollinators and Roadsides: Managing Roadsides for Bees and Butterflies." Xerces.org. Xerces.org, 2010. Web. 01 Apr. 2012.



SPECIES SPOTLIGHT Sericea Lespedeza

Species: Lespedeza cuneata



IDENTIFICATION Sericea lespedeza is an introduced, perennial legume native to Japan. It ranges from 1.5 to 6 feet in height with a taproot that can grow up to 4 feet. It has an alternate leaf pattern and is stands erect-like with three-foliated leaflets. The inflorescences of the plant are found either solitary or in pairs of two.

DISTRIBUTION/SITE CHARACTERISTICS Sericea Lespedza grows from New Jersey to Florida and as far west as eastern Texas. The main mode of reproduction for the Sericea lespedeza plant is by seed. Birds will ingest the seed and spread the seed through their droppings. Honey bees are the plants primary pollinator. in terms of vegetative reproduction, Sericea lespedeza will sprout from its ***caudex** after being top-killed (by fire for instance).

Image Source:http://extension.entm.purdue.edu

Although Sericea lespedeza is adaptable to many soil types, it does especially well in deep, well-drained loess soils. The plant can grow in soil with a pH range from 4.0 to 7.0 but does best in soils with a pH between 6.0 - 6.5.

MANAGEMENT CONSIDERATIONS Sericea Lespedeza can hinder early tree growth and survival and will typically outcompete native plant species. Interestingly, not many insects will feed on Sericea lespedeza. Occasionally Grass armyworms have been known to defoliate the plant and they can destroy the seed crop of the plant if the armyworms arrive in early spring or late summer.

IMPORTANCE TO LIVESTOCK & WILDLIFE Sericea lespedeza has been grown in the South for hay with good results. Cattle will graze Sericea through the growing season, particularly when the plant is young and tender. Sericea lespedeza is frequently planted as a food source for the northern bobwhite and other upland birds. Rabbits ingest the bark in the winter. Deer, rabbits, and wild turkey ingest the foliage while the seeds are eaten by birds and rodents. The plant is also used to provide cover for small birds and mammals.

FIRE EFFECTS Prescribed fire has been found to increase the density of Sericea lespedeza. Fire tends to top-kill the plant and, as stated above, the plant will then sprout from its caudex. Fire also scarifies the seed which also encourages growth of the plant.

***Caudex** The axis of a woody plant - comprising of the stem and root

Leopold Center Project Studies Grazing and Fire as Management Tools on Grasslands

Where there's smoke, there's fire — and in Iowa fire seldom is viewed as positive, even on the southern Iowa expanses of the Grand River Grasslands.

The Patch-Burn Grazing Team, an Iowa State University restoration ecology team whose work is funded in part by the Leopold Center for Sustainable Agriculture's Ecology Initiative, is working to change that perception. Team members are looking at both the promise and the practice for adoption of a grasslands management technique called patch-burn grazing.

The site for their work is the Grand River Grasslands Conservation Opportunity Area, a 70,000-acre tall grass prairie restoration landscape that straddles the Iowa-Missouri border. The research includes more than 1,000 acres managed in one of three ways for this project: prescribed fire only, grazing, then burning the entire site once every three years, and burning one-third of the area each year, and allowing access by cows for grazing, referred to as patch-burn grazing or fire-and-grazing interaction.

North American prairie ecosystems evolved in the context of both fire and grazing, but this practice largely has been abandoned as a management tool in recent decades. The team hopes to show nearby landowners the benefits of controlled burning and grazing.

"This project uses a new method of burning called fire-and-grazing interaction, which allows animals to follow the fire that is applied to specific portions of the landscape where the fresh, new, green growth emerges," said David Engle, a professor in natural resource ecology and management at Oklahoma State University, who began the project while at Iowa State University.

When asked about carbon output from the burning, Engle said research shows that burning grasslands is a carbon-neutral process; released carbon is offset by carbon turnover in the soil. "There is no more sustainable agricultural enterprise than livestock grazing on perennial forage plants," he added.

Ryan Harr, a scientist in the natural resource ecology and management department at ISU, said the purpose of using fire is to clear the landscape of old vegetation and woody debris. "The result is new vegetation that can be used for cattle production," he noted.

Iowa grasslands are being threatened by several invasive species. Eastern red cedar spreads at an exponential rate in grasslands that have not been burned in more than a decade. Sericea lespedeza is a noxious weed unpalatable to cattle and cannot be controlled by current herbicides.

"Both of these species could be more effectively controlled with patch-burn grazing than with traditional grazing management," said Lois Wright

Morton, sociologist and principal investigator on the project, “but bringing that knowledge into adoption and action is another challenge for our team.”

Diane Debinski, professor in the department of ecology, evolutionary and organismal biology, is studying insect responses to patch-burn grazing because of their importance as pollinators, for nutrient cycling, as food for songbirds and as predators for crop pests. “We can build a structure that looks like a grassland, but does it act like a grassland?” she asked.

A long-term goal is to develop a framework for implementing the fire-grazing model at several sites under the jurisdiction of the Iowa Department of Natural Resources and the Iowa chapter of The Nature Conservancy. “We would like to develop a model that can be used by any private landowner who wants to use the burning practice,” said Wright Morton.

Leopold Center Ecology Initiative leader Jeri Neal hopes producers will see the practical application of the patch-burn tool to make existing grazing operations more profitable, especially in southern Iowa where they compete with row-crop agriculture.

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This article was produced by Iowa State University. It can be found online at:
http://www.leopold.iastate.edu/news/01-25-2010/leopold-center-project-studies-grazing-and-fire-management-tools-grasslands

"Leopold Center Project Studies Grazing and Fire as Management Tools on Grasslands." Leopold Center for Sustainable Agriculture. Iowa State University. Web. 4 May 2012. <http://www.leopold.iastate.edu/news/01-25-2010/leopold-center-project-studies-grazing-and-fire-management-tools-grasslands>.

MEMBER PHOTO

Location: Green Meadows West neighborhood, adjacent to Foxboro Road in Johnston, IA.

Burn Date: Thursday morning, March 15, 2012.

Burn Organized By: Green Meadows West Homeowner’s Association

Member Contributor: Deb Schiel-Larson

Thanks Deb!!!

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THANK YOU for your support!

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SOUTHERN IOWA OAK SAVANNA ALLIANCE

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SIOSA newsletters are published quarterly.

Submissions to the newsletter should be sent to the editor: Jennifer Abraham at admin@siosa.org.