

siosa

SOUTHERN IOWA OAK SAVANNA ALLIANCE

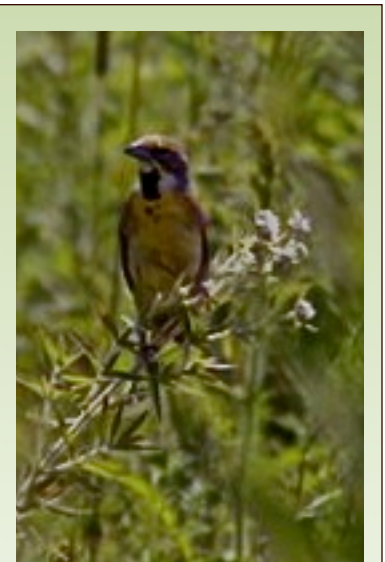


IN THIS ISSUE

- SIOSA PRESIDENT UPDATE & WORKSHOP HIGHLIGHTS
- POTENTIAL LOSS OF BUTTERNUT IN IOWA'S FOREST
- SPECIES SPOTLIGHT: FOX SQUIRREL AND BUTTERNUT TREE
- ARTICLE FROM OUR ARCHIVES
- QUESTION FROM A MEMBER

NEXT SIOSA MEETING/OUTING: APRIL 2ND
TRILLIUM WALK

SEE SIOSA.ORG FOR INFORMATION ABOUT
THE NEWLY FORMED SIOSA SPONSORED
4-H CLUB!



Hello,

Last Sunday morning we moved our clocks ahead one hour so warmer weather can't be far away!

At our February meeting we worked on strategic plans with many of your partners from the DNR, USFWS, NRCS, Turkey Federation, and various county conservation folks. It was a great meeting! We decided on five main goals to focus on in order to move SIOSA forward in the next few years:

- 1) Conserve native ecosystems
- 2) Improve knowledge of native ecosystems
- 3) Strengthen network relations
- 4) Expand funding sources
- 5) Promote prescribed fire

You can see the specifics of the goals on the website (siosa.org) under the "about us" tab.

Speaking of prescribed fire, the Landowner Workshop this past weekend was also a great success; we finally got to do some burning! Roughly thirty folks attended and there were many new faces.

The morning was spent in a classroom at Graceland University. Gregg Pattison, of the USFWS, gave us some general information about prescribed burning including some descriptive before-and-after aerial photos of a restored site. Then Rich Erke, Director at the Decatur County Conservation Board, walked us through a written burn plan. Next, it was into the rigs and out to an eight-acre area just south of Nine Eagles. We had a chance to view and learn about the use of burning equipment and hand tools. Mark Erke, Owner of Midwest Land Restoration, talked to us about what his company does and how to use chemicals for tree suppression. We then walked around the property to see the different timber structures and Gregg talked about management options. At that point we broke for some lunch from Subway, thanks Jen!

After lunch, most of us walked down to a nearby pond while others used backpack leaf blowers to clear fire breaks. Rich talked about back burning and showed us how to use some of the hand tools. He then lit the drip torch and the burning began.

Even though there had been snow on the ground just a few days before, the leaf cover burned well. The 8 - 12 inch fire burned slowly into the NW wind increasing the fire break to 20 feet. We worked our way north along the east firebreak just a few feet at a time. Many folks got to try their hand at the fire rakes, fire brooms, backpack sprayers, and the drip torch. After an hour or so folks started to head home. They left with knowledge of how to manage a prescribed burn and some hands-on experience on how to do it.

Thank you all for attending and Gregg, Rich, Mark, and Jen for making it a great experience!

N E W S L E T T E R



As a member of SIOSA you are able to borrow most of the tools needed to conduct a prescribed burn. And, after this weekend there are many folks that would probably enjoy the opportunity to help you!

Our next meeting/outing is the Trillium Walk scheduled for April 2. Check the website for the location and times.

See you in the woods...

Casey





Potential Loss of Butternut from Iowa's Forest

A Rare Mature Butternut in a Forested Area. Butternut trees produce valuable wood products used for years by carpenters for cabinets, flooring and furniture. It is a softer wood than black walnut, making it easier for woodworkers to shape and carve into products. Butternut grows on a variety of sites, doing best on well-drained soils in riparian areas and is native to the eastern ½ of Iowa, living up to about 80 years. Like black walnut and oak, it is intolerant of shade, so silvicultural regimes that are suitable for oak and black walnut are appropriate for butternut. Butternut produces seed that is desired by people and many different forest wildlife species. During the past 40 years, a disease called *Sirococcus clavigignenti-juglandacearum* (butternut canker) has spread throughout the northeastern United States. The spores of the fungus are spread by rain splash and wind, but the rapid spread of the disease suggests that insects also act as vectors. Dr. Dale Bergdahl and his colleagues have found that at least 17 species of beetles closely associated with butternut that can carry spores of the disease. A single beetle can carry as many as 1.6 million spores (just one is needed to cause an infection) and the spores can remain viable on insects for at least 16 days. The fungus can also be carried on the nut; causing some trees to be infected before they even begin to grow. There is no known treatment for the butternut fungus, so conservation efforts are focused on finding and protecting resistant trees. A challenge associated with planting more butternuts is determining if the trees are genetically pure. Butternuts can hybridize with other trees like Japanese walnut, which was introduced into North America in the 1800's.



A Rare Mature Butternut in a Forested Area

Status of Butternut in Iowa

In 1990 Iowa had an estimated 1.4 million butternut trees; by 2008 an estimated 84,000 trees remain (94% drop). There has not been any effort to date to determine how many of the 84,000 or so remaining trees are native butternut. There are some physical characteristics that can be used to distinguish between a native butternut and a hybrid, but it is usually difficult when looking up into the canopy of a mature tree in a forest setting. The trees we are finding in Iowa are being tested using DNA analysis to determine which trees are hybrids and which are native. Iowa is in a unique position with respect to the North American butternut range. The eastern half of the state is in the natural range of butternut and the western half is outside of the naturally occurring range.

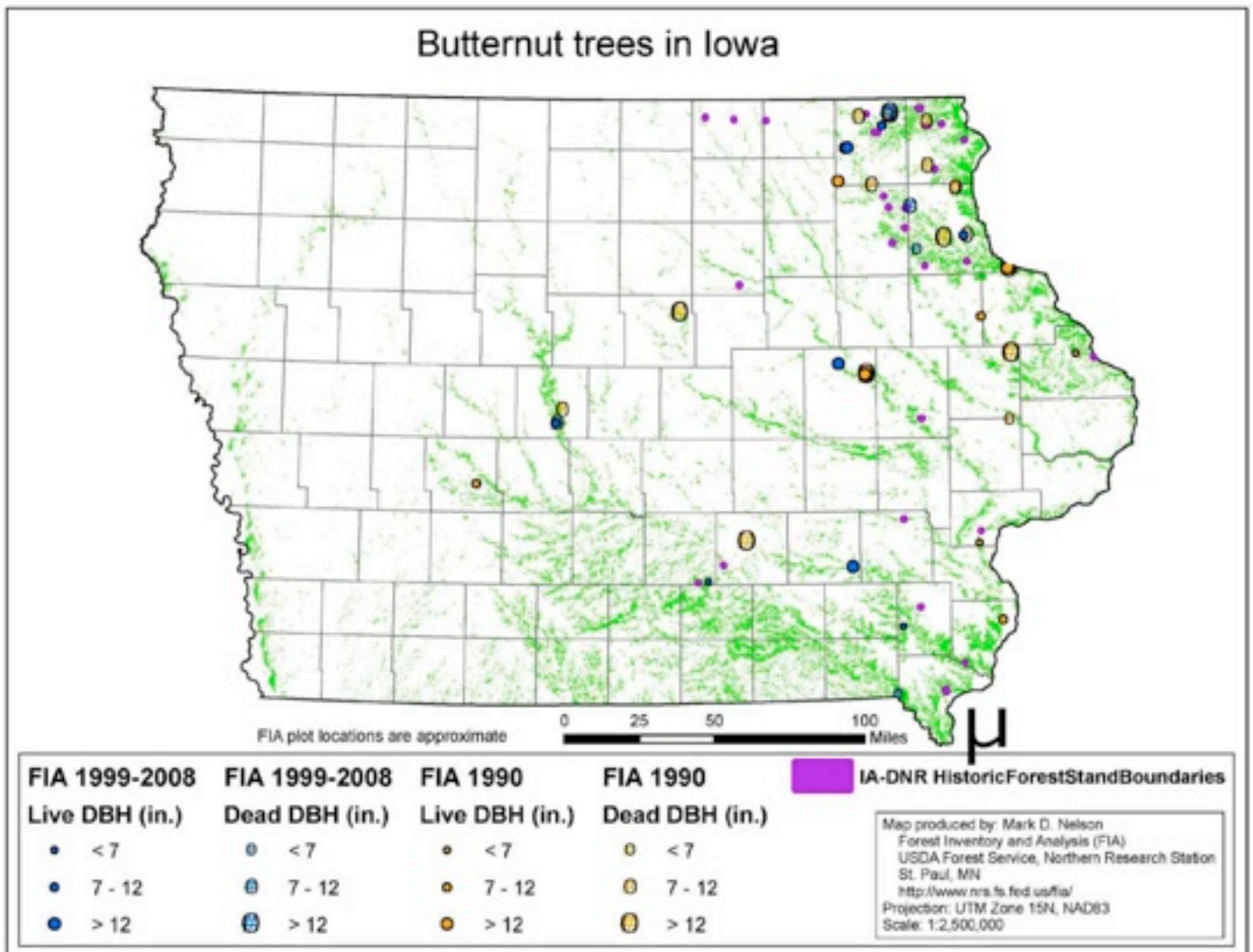
What are we doing?

The U.S. Forest Service has made selections of native butternuts throughout the northeastern U.S. over the past 20 years. Branches (scion) are collected from these trees to capture the exact genetics of these desirable trees. Scion has been grafted onto black walnut root stock to help create seed orchards that can produce more seeds to maintain a viable population of native butternut and to test for resistance to butternut canker. The Forest Service selections were made from butternut trees that survived around other butternut trees that died from canker, giving hope that this is a sign of resistance. Iowa has planted 150 of these seedlings in 2007 and 2008 (41 families) in two different areas in the Loess Hills State Forest and on one site in Yellow River State Forest. In 2009 Iowa along with 4 other states (IN, CT, VT, PA) put together a grant to fund more butternut survey and research. The grant helps to get more butternut surveyed in these states, record with GPS devices the locations of known butternuts, perform DNA testing to determine which trees are native, grafting scion from native selections, perform butternut canker resistance testing through direct inoculations and plant preserves/ orchards of more butternut trees that have the exact genetics of the forest grown survivor trees. Iowa has planted an additional 350 seedlings grown from seed by Hardwood Tree Improvement Regeneration Center (HTIRC) in the spring of 2010 from trees growing throughout the northeastern U.S. in an effort to continue to preserve more butternut seedlings. It is easier to collect seed from a wide area and grow them in a nursery bed, rather than grafting exact genetics.

Finally, DNR foresters are continuously following-up on leads of known forest grown butternuts. We have collected seed from 20 different butternut trees and established an Iowa butternut orchard in the Loess Hills as well. We have used DNA testing to determine which trees are pure and which are hybrid, so far we know we have 12 pure native butternuts and 1 hybrid, with

the other trees still needing to be tested. We have another 15 to 20 butternut trees to visit, collect scion and test for purity during the winter of 2010.

Contact Aron Flickinger 515-242-5966 (aron.flickinger@dnr.iowa.gov) for more information or to report the presence of a living butternut tree.



* DBH = Diameter at Breast height



SPECIES SPOTLIGHT Fox Squirrel

Scientific Name: *Sciurus niger*

Common Names: Stump-eared squirrel and cat squirrel

IDENTIFICATION The fox squirrel is Iowa’s largest tree squirrel. It can weigh 1.5 to 3 pounds. It can reach a length of 28 inches with nearly 1/2 of that length comprised of their tail. Fox squirrels can have a red (agouti), brown or black fur.

HABITAT/BREEDING The range of eastern fox squirrels extends from the Atlantic and Gulf coastal plains west to the Mississippi River floodplain. Fox squirrels inhabit a variety of hardwood forests. In Iowa, they are most abundant in the transition zone between oak woodlands and prairies. The fox squirrel prefers woodlands with minimal understory vegetation. Fox squirrels build leaf nests roughly 30 feet above ground level or they may inhabit tree cavities (preferable for wintering).

*Estrus occurs in female fox squirrels in December and January and again in June. Gestation lasts 44-45 days. Litter size is typically 3. On average the eyes of the young do not open until they are 4 or 5 weeks old. It can take up to 12 weeks for young fox squirrels to be self-reliant. The fox squirrel can live up to 6-8 years in the wild and have been known to live up to 13 years in captivity.

DIET The fox squirrel’s diet is fairly site-specific. In general fox squirrels feed on mast, insects, tree buds, tree fruit, roots, fungi and bird eggs among other foods.

PREDATORS Although the fox squirrel is difficult to hunt as an adult, several species make them their prey: Short-eared owls, barred owls, red-tailed hawks, foxes, bobcats, snakes, cats and dogs.

FIRE EFFECTS A study performed by Kirkpatrick and Mosby found that prescribed fire did not have any significant effect on the direct mortality of the fox squirrel. Wildfires, on the other hand, have the capacity to burn the nests of the fox squirrel and directly endanger the life of the fox squirrel. Prescribed fire can benefit the fox squirrel in a few ways; prescribed fire will promote a lush grassy understory and provide protective cover for the fox squirrel. Also, prescribed fire produces open stands and thereby increase mast production for some trees.



***Estrus** A recurring period of sexual receptivity and fertility in many female mammals.



SPECIES SPOTLIGHT Butternut

Scientific Name: *Juglans cinerea*
 Common Names: White walnut, oil nut

IDENTIFICATION On average, butternut grows 60 to 80 feet in height. The tree diameter can range from 1 to 2 feet. Branch limbs are sparsely forked with the smaller branches bending downwards and with the tendency to turn upwards at the ends. The crown is broad, open and rounded at the top. The bark is usually a light gray color with plate-like surface, with dark ridges in between the platy ridges.

DISTRIBUTION/SITE CHARACTERISTICS

The butternut range includes southeastern Canada and northeastern United States with pockets of butternut sometimes found as south as Mississippi. It is associated with oak-pine and oak-hickory forests among other plant communities. Butternut grows in eastern Iowa in well-drained areas such as sloping land, terraces or stream banks. Young butternut saplings are somewhat shade tolerant but as it matures it must be in the overstory to thrive. It is



generally classified as intolerant to shade and competition. The butternut tree will flower from April-June and the fruit matures in September or October, depending on location. The fruit usually remains on the tree after leaf fall.

WILDLIFE USE The leaves of the butternut are palatable to white-tailed deer. Squirrels and other rodents eat the maturing fruit.

HUMAN USE The butternut is not known for lumber use but like its relative, the black walnut tree, it is often used for interior furniture and cabinetry. Similar to the black walnut, the husk of the nuts and the fruit were used to make dyes by early colonists. Native Americans were known to boil the nuts to extract oils for use as butter.

FIRE EFFECTS Butternut is fire intolerant. It does not sprout after a fire. An intense fire or several low-intensity fires will in effect eliminate butternut in mixed hardwood stands.

How to tell the difference between a pure butternut and a butternut hybrid

Table 1. Summary of characteristics of pure butternut and hybrid butternuts.

I-Year Twigs	Butternut Characteristics	Butternut Hybrid Characteristics
Current-year stem color	Olive green changing to red-brown near terminal buds; glossy, few hairs except immediately beneath terminal buds.	Bright green to copper brown or tan, often densely covered with rust or tan hairs, especially near terminal buds. Pale green near terminal bud.
Terminal bud	Whitish to beige in color; narrower, the outer, fleshy scales more tightly compact and bud longer than hybrids.	Pale green to tan or yellowish in color, often pyramidal in shape, wider and squatter than butternut. Outer fleshy scales more divergent than butternut and often deciduous.
Lateral bud	Vegetative buds are elongated and somewhat angular, creamy white to beige in color.	Vegetative buds are rounded, and green to greenish brown in color.
Lenticels	Small, round, abundant, evenly distributed, sometimes elongating horizontally across the branch (perpendicular to the stem axis).	Large, often elongating laterally down the branch (parallel to the stem axis) on 1-year wood, patchy distribution. On 3- and 4-year wood, lenticels often form a diamond pattern as they become stretched both transversely and longitudinally.
Leaf scar	Top edge almost always straight or slightly convex; scar usually more compact.	Top edge almost always notched; often with large, exaggerated lobes.
Pith	Very dark brown.	Variable, dark brown, but more commonly medium brown or even light brown.
Mature Tree		
Bark	Varies from light grey and platy to dark grey and diamond-patterned in mature trees. In older trees, fissures between bark ridges may be shallow or deep but are consistently dark grey in color.	Silvery or light grey, rarely darker. Fissures between bark ridges moderate to shallow in depth and often tan to pinkish-tan in color.
Leaf senescence	Leaves yellow and brown by early-mid autumn, falling in early to mid autumn.	Leaves often green until late autumn, falling in late autumn or may freeze green on the tree.
Catkins	2 – 4¼ inches in length at peak pollen shed.	5 – 10 inches in length at peak pollen shed.
Nut clusters	One or two nuts per terminal in most clusters, sometimes 3 – 5, rarely more.	Usually 3 to 5 per cluster, sometimes as many as 7.

Source: Excerpt from a publication that was adapted and expanded from an article that appeared in the *Northern Journal of Applied Forestry*. Woeste, K.E., L. Farlee, M.E. Ostry, J.R. McKenna, and S. Weeks. 2009. A Forest Manager's Guide to Butternut. *Northern Journal of Applied Forestry*. 26(1): 9-14.

We have come across some old articles written by one of our members that we would like to recirculate!

Enjoy...

FROM THE ARCHIVES: Allelopathy

Many times you'll see animals fighting over such things as food or territory, but what about plants? Do they ever fight each other for food or space? The answer is yes. While most plants are in competition with each other for sunlight, water and nutrients, a few plants take this competition one step further by producing and emitting toxic chemicals to keep other plants away. This phenomenon is known as "Allelopathy".

It is thought that as plants evolved, they developed these toxic chemicals to keep grazing animals away. When parts of the plant died and fell to the ground, the chemicals washed out into the soil and killed neighboring plants, thereby reducing the competition. As time passed and plants progressed, these chemicals were produced for the sole purpose of killing or restricting nearby plants.

These allelopathic chemicals may be deadly to any plant in the area or very selective, killing only certain plant species while not harming others. Some plants produce chemicals which are toxic to itself and other members of its species. This form of allelopathy is called "Autotoxicity". To escape the effects of its own toxicity, a plant may restrict its growth to a period when these toxins are at low concentrations in the soil. Another way a plant can escape its toxins is to have a root system which grows well below the layer of contaminated soil. Plants that do this generally have toxins that breakdown and become harmless as they are washed deeper into the ground. An interesting example of autotoxicity occurs in peach trees. When a peach tree dies, the decaying roots produce a toxic chemical which prevents another peach tree from growing on that spot. Autotoxicity is helpful in limiting the population of a particular species in an area.

Practically all plants contain some toxic compounds. Most plants, however, are not allelopathic because these chemicals either deteriorate as the cells containing them die or, if released, are soon inactivated in well aeriated soils. Allelopathy is just one more way nature has devised a tool for survival.



QUESTION FROM A MEMBER...

“Readers, can you help with identifying everyday plants?

This plant stays upright throughout the winter. What might it be?

Thanks”

- Mark Metelman

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!

SIOSA OFFICERS & DIRECTORS

Officers:

Casey Campbell, President
726 53rd St.
Des Moines, IA 50312
cmcampbell54@gmail.com

Mark Erke, Vice President
Dick Hillyard, Treasurer/Secretary
Jennifer Abraham, Administrative Assistant

Directors:

Bill Brown
John Orvis
Paul Gunzenhauser
Dick Hillyard
Rich Erke
Dave Whittlesey
Casey Campbell
Mark Erke

Program Advisors:

Gregg Pattison, USFWS
Richard Erke, Decatur County Conservation Board
William and Sibylla Brown, Timberhill Savanna

SIOSA newsletters are published quarterly.

Submissions to the newsletter should be sent to the editor: Jennifer Abraham at SIOSA@me.com

N E W S L E T T E R

