Field Seminar

Savanna Restoration

July 2006

These **field seminars** are for people with some background in ecological restoration who would like to learn from the 25 years of restoration efforts at Somme Prairie Grove. The text and map are meant to be carried during a walk around the site, so the person participating in the seminar can look at the ecosystem and see the species and their relationships while reading the histories, comments and questions.

This seminar follows the **Inner Loop** trail at **Somme Prairie Grove**. The common names below follow Swink and Wilhelm's "Plants of the Chicago Region."

BEGIN at the entrance at the corner of Waukegan and Dundee Roads, and take the first right fork in the footpath to find point A.

A. It's embarrassing to start the field seminar in this neglected corner. Notice massive amounts of re-sprouting buckthorn along the trail. Compare this area with point "K" in the 2006 burn area later in the seminar. The goal is to foliar spray resprouts with Garlon 3A after a controlled burn in the spring of 2007.

B. Near the top of a slight rise, just before the trail turns north and starts to descend, notice **false pennyroyal** forming a solid carpet over an area about six feet in diameter. This is a former burn pile that was seeded with a general savanna seed mix. Few plants of any of the other species are apparent yet. And false pennyroyal wasn't even in that mix. It's in the woodland mix. But we often mix a little of similar mixes before we broadcast a given mix – because we doubt the perfection of both our mix lists and our choices of which mix to use in a give spot. Here false pennyroyal have given us a (temporary?) surprise.

C. The high ground here on the west side of the trail was herbicided to get rid of **dewberry** – a plant that in some situations seems to be able to wipe out everything in short run. Also sprayed in this perhaps twenty-foot diameter area was buckthorn and dogwood. The herbicides used were Krenite and Garlon. Neither did a great job, so there were re-applications. A large part of the existing vegetation ended up being wiped out with the pests. **Ox-eye daisy** and **black-eyed Susan** came on strong in the early stages of the recovery. Both probably facilitate ecosystem diversity and health if other seeds are present. It will be interesting to watch the non-brush-pile areas east of the trail for comparison.

D. Consider the area east of the trail when it turns north. There was no prairie grass here when the restoration started – except for just a plant of two of **big bluestem** fifty feet or so to the east. There was also just a plant or two of **New Jersey tea** (closer to the trees). We worried about the bluestem taking over and making a depauperate semi-monoculture. We even scythed it back a time or two when, as a result of burns, it seemed to be getting over-exuberant. On the other hand, we seeded in as many of the missing conservatives (**prairie clover, dropseed and little bluestem grass, compasplant, leadplant**, etc.) as we could get local seed of. The New Jersey tea has done poorly in most of our plantings, but here (where perhaps some symbiotant was present) it has been spreading massively.

E. Note **slender wheat grass** thriving in a shrubby area. We seek to manage this section as shrubland, a component of the savanna, with its numerous stands of **wild plum, black haw, gray dogwood, and bur oak grubs**. Oak grubs are oak bushes that burn off and resprout repeatedly; they may have been a major component of natural shrublands.

F. This area has a lot of shrubs and many of their associates including **Kalm's brome and cream gentian**. Note two oaks (bur and scarlet) a few feet apart on the west side of the trail. The

bur is becoming a fine little tree – with protection from the deer. The scarlet, which we did not protect, has been kept shrubby and miserable. Protection of the bur oak consisted of a cage to prevent browsing until it was more than five feet high – and then a barrier of dead brush stuck in the ground during wet weather – to keep the bucks from girdling it with their antlers. (The bucks find springy trees out in the open to be irresistible for rubbing.)

G. Just before the corduroy log bridge, study the multiple failure area on the east side of the trail. Brush was cut here long ago (see brush pile behind) to open up the thousands of **shooting stars** that survived under the **gray dogwood**. The deer ate most of the shooting stars, and the brush all came back, especially buckthorn. Two summers ago, after the shooting stars were dormant, the brush was foliar sprayed with Garlon 4 (Garlon 3 might have been a better choice), which killed the top layer (mostly dogwood) but left an understory of young buckthorn. That fall, the buckthorn was sprayed as well. It seemed mostly dead, but most everything else did too, except for an invasion of daisy and a bad **Canada thistle** problem. Now what?

H. On the north side of the log bridge, two contrasting treatments. On the east side where the buckthorn was mixed with dogwood and viburnum, buckthorn was selectively cut (often without herbiciding) to favor the native shrubs. **Bastard toadflax, prairie dock** and other fine species unexpectedly emerged as the brush thinned. On the west side where the buckthorn was mixed with sumac, we cut and herbicided everything but the sumac. But the deer then wiped out the sumac with antlers and browsing. This is another challenging area.

I. On the north slope of the knob to the east of the trail, an unintended experiment succeeded. An early successional planting resulted in heavy dominance by **Indian grass** when it was 6 to 8-years old. We worried about having little else there. But about 15 years into the experiment, the Indian grass was entirely gone. In a complete circle around the original patch, the Indian grass (seeded in from this patch) was dense. But in the area of the original planting there was not a single plant. Nor had it been out-competed by other plants; in fact much ground was simply bare. It seemed more like the Indian grass had spawned some disease that it couldn't withstand, or had used up some essential nutrient, or had somehow made that area unlivable for itself. At that point we broadcast some of the best seed we could find and now find the area rife with **dropseed, little bluestem, prairie clover, leadplant**, and many other conservatives.

J. The north half of the preserve seems to have been formerly farmed more heavily, and (except for one fence row) the uplands of the north half had many fewer surviving conservative plants and **few young bur oaks**. We're working especially hard to re-establish a bur oak population (from on-site seed) in this area. We protect the young ones from fire to some degree by thinning the fuel near them.

K. Notice many "holes" in the vegetation, in areas of dead sticks. After decades of burning and re-sprouting, we finally followed the recommendation of Tom Vanderpoel and foliar sprayed the post-burn resprouts in this area.

L. These **white oaks** appear to stem from a long ago FPD planting (along with paper birch, silver poplar, post oak and other trees that wouldn't be planted here today). They're more sensitive to fire than a savanna probably wants, but they may be a nurse crop while the bur oaks are recovering. The understory here was solid **tall goldenrod**, with few other species. One of the few that were here, grove sandwort, inspired the extra attention of an experiment. The goldenrod was scythed twice a year and largely vanished. A savanna seed mix broadcast into the possibly receptive post-goldenrod area has produced a rich mix of such species as **wide-leaved panic grass, Leiberg's panic grass, big bluestem, dropseed, Culver's root, purple milkweed, violet bush clover, two-flowered cynthia, two endangered species** (not to be mentioned on an internet account by name) and a great many more.

M. This former fence row after a few burns was seen to have, under its bur oaks, **hazelnut, shooting star, white trillium, downy rye, Iowa crab** and other quality species. But look at this area now! A disaster. (For a comparison with a similar area that's received a lot more work, look at the area under the oaks north of point K.) There are so many thousand little buckthorns that it's hard to imagine how to kill them all without killing everything else. To make it worse, the deer have clobbered the hazel, which might have provided some competition for the buckthorn. Notice some clusters of dead sticks a foot or two high. Those are dead hazels. Only a few hazel leaves are left. They seem to shrink before the buckthorn – even though the buckthorn have been frequently snipped away to give them room.

N. Here a large stand of **prairie cord grass** crept up the slope out of its natural wet habitat into the dry turf of a pasture. Major plants here twenty years ago were **poverty oats, early goldenrod and Canada bluegrass**. In time, better adapted mesic species should gradually drive back the cordgrass, but in the meantime the cordgrass has had an interesting side effect. Before white-tailed deer populations exploded in the mid 90s, **Canada milk vetch** (restored here from two nearby savannas) was rapidly increasing. The deer eliminated the plant (so far as we could tell) from the site until we found a thriving population here. Apparently the deer did not want to subject their delicate mouths to this 'rip-gut grass.'

O. Notice a band of quality plants about 8 feet wide on the west side of the old main trail, which forks to the left here. Plants include **dropseed grass, leadplant, both white and purple prairie clovers**, and many more. This band continues along this trail for about 50 yards. West of the intersection with the current loop trail (i.e. where you're likely standing as you read this) the seed was planted into an area of dense big bluestem, which contrasted with most of the before-planting vegetation along the rest of this band (**bluegrass, timothy, redtop, Canada and stiff goldenrod**, etc.). Note that the conservative forbs prospered just fine in the big bluestem. But did dropseed grass?

P. The east side of this trail hosted many early experiments in inter-seeding. But the first experiment was with planting the dormant young roots of individual plants about a meter east of the trail. Many did well (including **cream false indigo, leadplant, dropseed, prairie clover, and rattlesnake master**) and are still here today. But inter-seeding did so well for these species that it replaced individual "rootlings" and "plugs" entirely.

This field seminar was prepared by Stephen Packard with the hope that this exercise might help us learn from each other. He would be pleased to receive comments, recommended improvements, etc. Please send them to info@sommepreserve.org.

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