Field Notes

Kerr Center for Sustainable Agriculture E-Newsletter

E-Field Notes
January 2015

Happy New Year from the Kerr Center! In this first issue of our new email-only newsletter, you can find updates on recent activities in all of our programs - cover crops on the hort plots, grazing stockpiled forage in the cattle pastures, and the milkweed-monarch connection - along with an overview of the educational events coming up in spring and summer. In addition, find out how you can support the Kerr Center, and more!

In this issue:

More Milkweeds, More Monarchs

Butterfly milkweed in the Kerr Center office landscape attracts bees as well as monarchs. Photo by Maura McDermott.

In February, monarch butterflies in Mexico stir from their long winter's nap and begin their epic journey north.

Oklahoma is an important stop on this spring migration.

Why? Oklahoma is home to 26 varieties of milkweed (*Asclepias* spp.). And milkweed is the only plant on which monarch butterflies will lay their eggs, and it is the primary food source for monarch caterpillars.

Milkweeds grow in every quadrant and eco-region of the state. At the Kerr Center we have planted butterfly milkweed (*Asclepias tuberosa*) and swamp milkweed (*Asclepias incarnata*) in our Native Plant & Pollinator landscape. Both have beautiful flowers. The swamp milkweed is especially attractive to monarch butterflies as a host plant.

In 2015 we are planting a variety of milkweed seeds in our greenhouse. Seeds are often planted in fall, but if treated properly planting them in very early February may yield good results.

Pollinator Project Coordinator David Redhage has chosen several varieties native to Oklahoma to grow this year: tall green milkweed (*Asclepias hirtella*), butterfly weed (*A. tuberosa*), common milkweed (*A. syriaca*), showy milkweed (*A. speciosa*), green milkweed (*A. viridis*), swamp (pink, rose) milkweed (*A. incarnata*), antelope horns (*A. asperula*), short green milkweed (*A. viridiflora*), whorled milkweed (*A. verticillata*), and prairie milkweed (*A. sullivantii*).

Milkweeds are important pollinator plants. Honey bees, and a variety of native bees such as bumble bees, visit milkweeds. Studies have also shown that some milkweeds attract large numbers of beneficial insects or natural enemies of crops pests such as mite-eating lady beetles and parasitic wasps.

Monarch caterpillar eating swamp milkweed at Kerr Center, fall 2014. Photo by David Redhage.

Above all, the humble milkweed plant is the key to the survival of the monarch butterfly. Scientists have linked the steep declines in the numbers of monarch butterflies (550 million in 2004 to 33.5 million in 2013) to a decline in populations of native milkweeds.

Scientists have also reached a consensus that the increased large-scale use of herbicides on herbicide-tolerant crops such as corn and soybeans has led to a significant drop in milkweeds.

Milkweeds used to be numerous on the edge of fields, but in one recent study of corn fields in Iowa, the number of milkweed plants was down 90% over a ten year period.

The equation is simple: no milkweed, no monarchs.

The opposite is also true: more milkweed, more monarchs

The solution is equally clear cut: preserve native milkweeds where they occur in our fields and pastures, meadows and roadsides. And plant milkweeds in our gardens, yards and farmscapes. This is where ordinary people can really make a difference.

Learn more about the **status of the monarch butterfly** and **Oklahoma's place in the monarch migration and Kerr Center's milkweed plantings** along with links to more information.

- Maura McDermott

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Winter Season on the Cannon Horticulture Plots

George Kuepper with a roller/crimper used to terminate cover crops for organic no-till. Photo by Wylie Harris.

If you've stayed current with work at the **Cannon Horticulture Plots**, you'll know that we use a bio-extensive management system characterized by **planned crop rotation and the creative use of cover crops**. As each season goes by, we learn more and more about the benefits and challenges of this approach, and each time those lessons inform and define our work in the upcoming year.

2014 raised a number of questions about how to farm with cover crops using small-scale, market-farm equipment. We've planted winter cover crops with an eye to addressing these questions in 2015.

Among the things we have attempted over the past few years - successfully and unsuccessfully - are killed mulch methods. Sometimes called "organic no-till," these methods entail mechanically killing dense cover crops and leaving the residue mulch in place.

Crops are then planted or transplanted into the mulch. We've used two kill or "termination" techniques: mowing and rolling. The latter requires a crimper/roller - a special weighted cylinder with steel plates that break the stems of the cover crop.

We have discovered that there are few published guidelines regarding small-scale planting and transplanting tools and techniques for killed mulch systems. To help growers identify such options, we've planted six plots with different combinations of cover crops that will be mow- and roll-killed in spring.

All of the plots contain a grass - either oats or grain rye. These have also been seeded with crimson clover, arrowleaf clover, or hairy vetch.

We hope to plant small gardens in each using different small-scale technologies. At this time, the cover crops are in excellent shape and we fully expect the trial to go forward.

A second trial that we're preparing addresses the more specific question of how to manage cover crops when planting very early crops like lettuce, spinach, white potatoes, or broccoli. The Cannon site has poorly drained soil and we have difficulty getting onto fields in early spring as it is, never mind the further difficulties of incorporating cover crop residue and making a fine seedbed.

This last fall we ridged a trial plot before seeding cover crops in the hopes that the ridges will warm earlier and drain better than flat ground. Various mixes of grain rye, oats, crimson clover, winter peas, and several brassicas - like turnips and tillage radish - were then seeded.

We expect to try several combinations of small scale mowing, tilling and planting equipment in early spring. Unfortunately, we were late planting the fall cover crop and have not seen as much growth as we'd like by this time. However, we expect at least some of the plots to have suitable cover when needed.

Finally, we are evaluating a few cover crops with which we have little or no experience. These include turnips, triticale (which results from crossing grain rye and wheat), and phacelia - a non-legume popular in Europe for its excellent soil conditioning effects. All of these are growing well and we expect to learn a lot from growing them.

- George Kuepper

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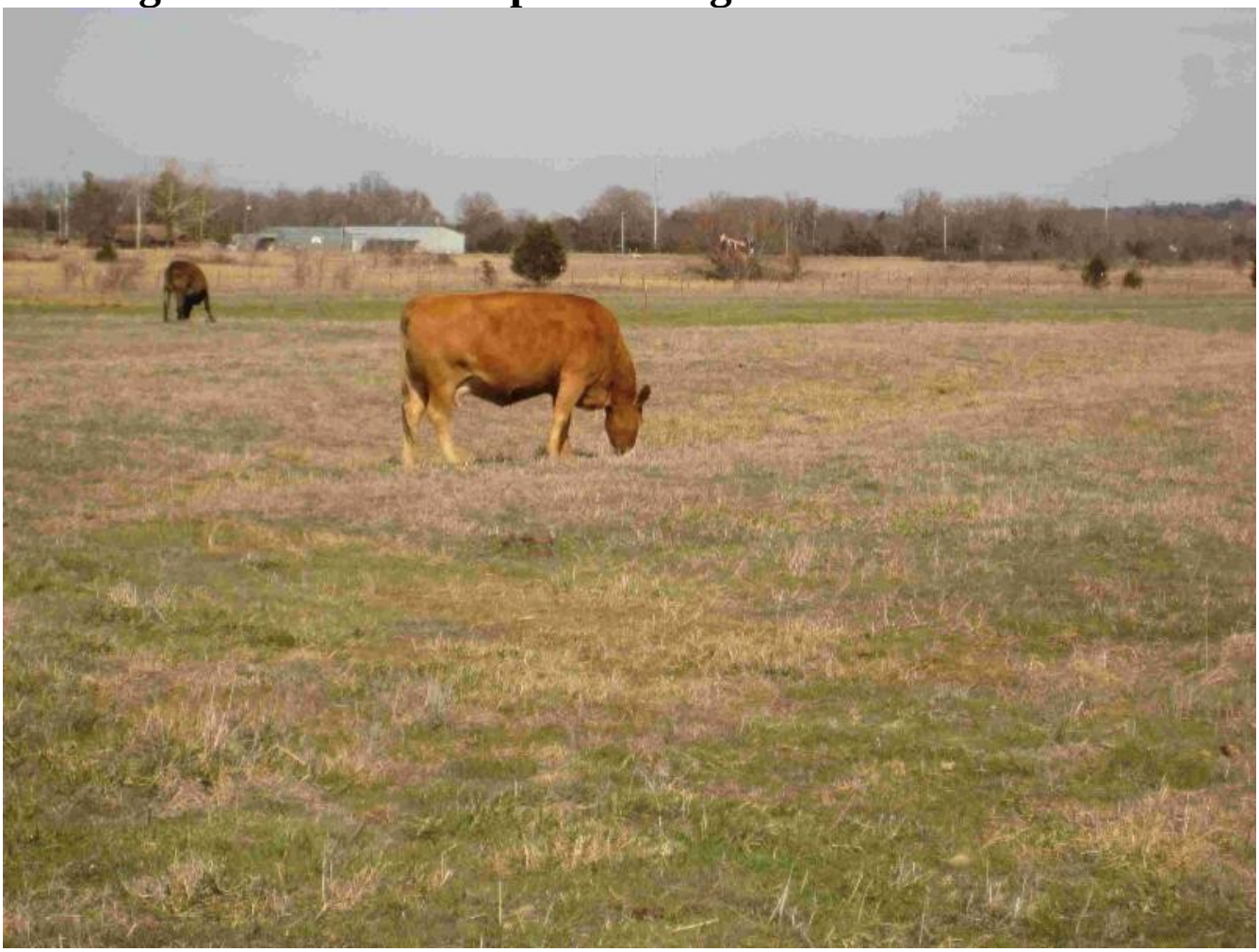
Grazing All Winter: Stockpiled Forage and Pasture Rest



Winter grazing on the Kerr Ranch. Photo by Wylie Harris.

"We've fed hardly any hay to this point, and it's mid-January," says Kerr Center Cattle Manager Will Lathrop.

"My goal is to stockpile forage during the summer for winter use. If I'm not feeding much hay, and it's the middle of January, that's where we want to be." But the real question, he says, is, "How do we do that?"

Lately, the weather has offered a helping hand. "Last year, we got rain in August. The year before that, it came in July." That summer moisture added up to a lot of winter forage.

"This year we may not put up much hay, because the barns are still full."

Even in the midst of plenteous forage, though, Lathrop is looking ahead. "We always have to think about drought. The drought three or four years ago has changed a lot of people's minds about stocking rate, because they had to sell the cow herd."

"Right now we're running five acres per cow. 'Normal' is supposed to be three, and you put up a lot of

hay."

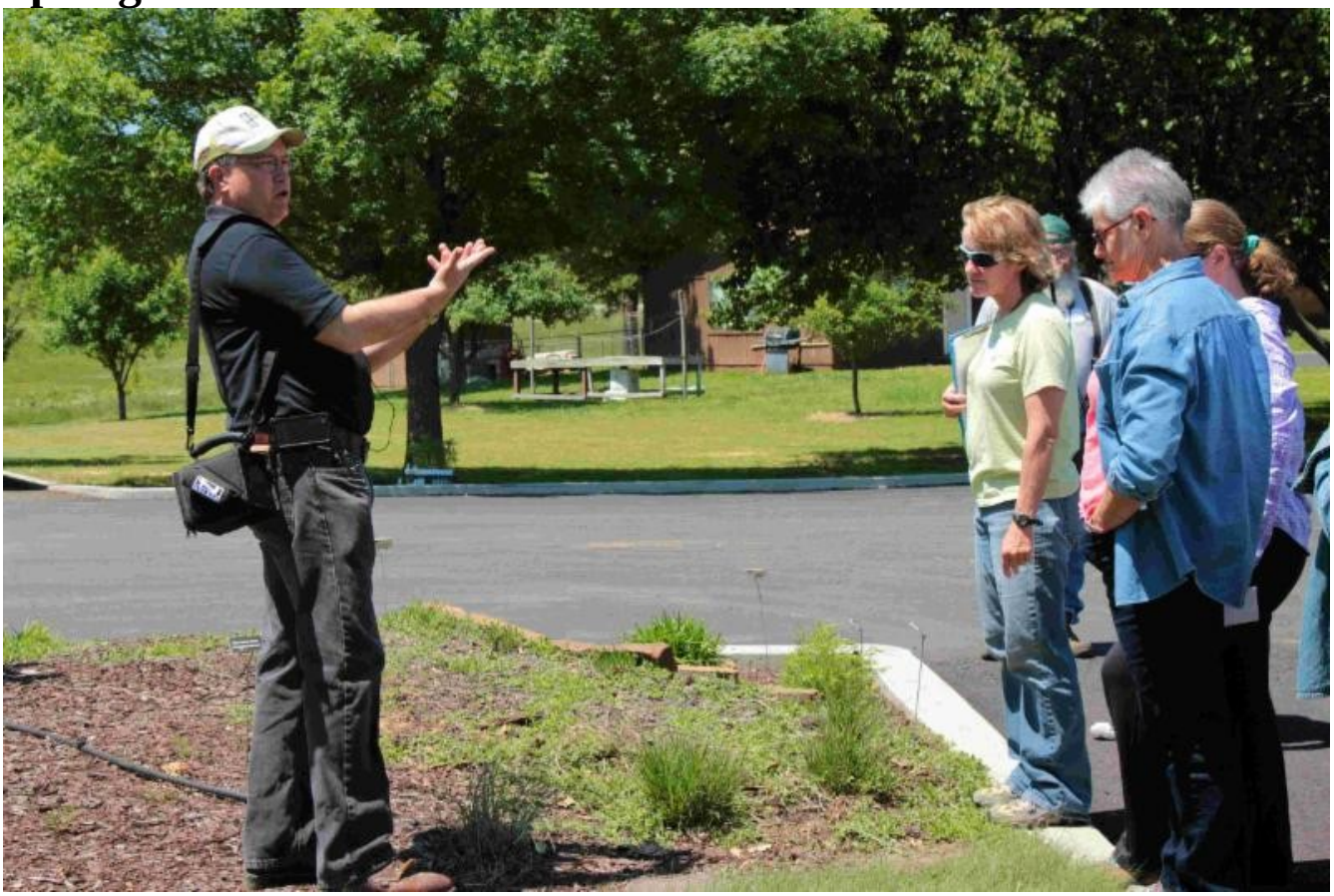
"A lot of our pastures are only grazed twice a year. Our goal is to graze two or three times a year, max." That adds up to between 100 and 140 days of rest between grazing for every pasture.

"That rest is part of keeping a viable forage resource."

The Kerr Center website's **livestock pages** link to more **information on forage management**. For those interested in a more in-depth treatment, Lathrop will host a **fall field day** focusing on the nuts and bolts of forage stockpiling and utilization.

- Wylie Harris

Spring/Summer Events



David Redhage shows visitors around the Kerr Center's office plantings of pollinator plants. Photo by Maura McDermott.

In addition to **monthly tours**, the Kerr Center has a full slate of workshops on a range of topics lined up for late spring and early summer.

On May 9, join Join ODAFF Market Coordinator Micah Anderson on the Kerr Center's Cannon Horticulture Plots for an **introduction to plasticulture**. Anderson and Kerr Center Horticulture Manager George Kuepper will demonstrate laying plastic mulch with a drip irrigation system

underneath. Learn about the pros and cons of plastic mulch.

On June 6 (tentative), the Kerr Center's David Redhage will lead a **native pollinator workshop** covering topics including pollinator habitat for Oklahoma, livestock management for pollinators, and habitat/plant identification. Learn about Kerr Center's ongoing/expanding pollinator habitat.

On June 11, George Kuepper will host an **organic horticulture field day**, with an evening tour of the Kerr Center's certified organic Cannon Horticulture Plots. See what we have growing in our vegetable plots, and learn how we manage weeds and build soil health through rotations, cover crops and other organic practices.

In late June, Kerr Center livestock staff will lead an evening workshop on **pasture plant identification**.

In early July, the livestock program will present a full-day **water quality workshop** covering riparian area management, stabilized stream crossings, and livestock watering systems (gravity flow from ponds, tractor-tire watering tanks, and portable watering systems).

For registration details and additional information on these and other upcoming Kerr Center events, including to-be-announced exact dates and times, visit the Kerr Center's **online events calendar**.

Friends of the Kerr Center

Since 1965 the Kerr Center has been reaching out to folks in Oklahoma and beyond. Today, the Friends of the Kerr Center help us continue this vital work! If you enjoy reading this newsletter or visiting our website, consider **making a gift to the Kerr Center** today!

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