

Planting #130

2019 Planting History

Prepared by Amanda Contreras

Name: Franklin Creek Natural Area Prairie

21 acres total

Dry Mix: 1 acre

Dry Mesic Mix: 5 acres

Mesic Mix: 15 acres

Site Conditions

General Location: On Old Mill Road, east of Twist Road. Planting is located inside of Franklin Creek Natural Area.

GPS: 41°51'21.64"N, 89°20'58.33"W

Elevation: 700ft-715ft

County: Lee

Soil Types

According to the Web Soil Survey, soil types for this planting include:

Soil Type	Acres in AOI	Percent of AOI
St. Charles silt loam, 0 to 2 percent slopes	3.6	18.3%
St. Charles silt loam, 2 to 5 percent slopes	0.6	3.2%
Comfrey silt loam, undrained, 0 to 2 percent slopes, frequently flooded	0.9	4.3%
Comfrey loam, 0 to 2 percent slopes, occasionally flooded	14.8	74.2%
Totals:	20.0	100.0%

Figure 1. Soil types present within the 2019 planting. (Source: NRCS)

Above are basic descriptions, a complete soil test is needed to determine specific soil characteristics. For additional information, see Soil Web Survey website: <http://websoilsurvey.nrcs.usda.gov/app/> . A soil type map of the site can be found on page 16 of this document.

Topography

The topography of the planting consists of a hill on the southwest corner with a 0-2% slope moving into the flat, low areas to the east half of the planting. Franklin Creek runs along the east planting border, just 15 meters at the closest distance. There is a smaller dry ridge on the northwest corner with its aspect facing southeast, towards the middle of the planting.

Agricultural History

This site had previously been in row crop for several years. Soybeans were planted this year and the soil was tilled after the harvest.

Site Preparation

The 2019 season was generally very wet, especially early spring. Local farmers were pushed to plant their crops very late in the season due to flooding and overall wet conditions. The planting at FCNA began on Tuesday, November 12th and was completed by lunchtime the next day. The conditions were ideal, albeit a bit cold. There was a thin layer of snow left on the ground from the snowfall of the previous weekend. The temperature averaged 15°F with little to no wind.

Since the soil was previously tilled, there was no need for mowing or burning the crop stubble. The worked ground and low temperatures made for easy mobility in the three work trucks.

The parcel of land is owned by the Illinois Department of Natural Resources (IDNR), and Nachusa Grasslands worked hand-in-hand with Russell Blogg, the district heritage biologist for Lee County, to restore the native habitat. Russell Blogg visited the site the week prior to planting and flagged an area off the east edge where future work with heavy machinery was scheduled to take place. This area was included in the Canada Rye border (see Seed Mix Map on page 17).

Planting the Seed

The entire site was seeded by three broadcast seeders (1-3). These implements were pulled by the three work trucks: White Crew truck, Silver truck, and the 2020 Z truck. Tyler Pellegrini, Riley Nylin, and Amanda Contreras were the seeding conductors. Luckily, we had no mechanical malfunctions or sticky situations occur during the time of planting. Travelling to and from the planting site required teamwork and very careful driving. For future reference, Twist Road is about the same exact width as our largest broadcast seeder (Seeder #1). We used digital radios to frequently communicate with each other.

The site entrance is in the southeast corner of the planting, just before the bridge on Old Mill Road. This corner also acted as the staging area. Beginning at the staging area, the three vehicles pulled the now open seeders in a counter-clockwise formation. The strategy was to complete the specified area following the concentric circles of our tracks in the snow. The specified areas divided by seed mix type. The different mixes are outlined in the Seed Mix Map on page 17.

The only species that was thrown out by hand was *Hesperostipa spartea*, commonly known as porcupine grass. This seed was donated to the crew from an unknown donor and was harvested with the awns still attached. The crew traditionally cuts the awns off since they clump together and block the seeder openings during planting time. To simplify things, we threw this species out by hand instead of including the sizable amount to the mixes. This was spread out over the highest points of the two dry slopes.

Planting Mixes

Several different planting mixes were made this year, not all of them were used on this site. The mixes are broken up into five categories: Dry, Dry Mesic, Mesic, Wet, and Woodland. The Wet and Woodland Seed Mixes were saved for other plantings/overseeding areas. (See the 'Wet' section below for more details). Overall, each acre was planted at a rate of 50 lbs/acre.

The FCNA prairie restoration site was the only planting confirmed for the 2019 planting season. The strategy was to plan for this particular planting and the rest of the seed would be used for overseeding or possibly planting new prairie on Nachusa Grasslands property. Throughout the months of seed harvest, the crew focused on obtaining a wide range of species, keeping diversity as the main priority. Quality was preferred over quantity, especially after the crew lost half of its members to graduate schooling. Since we knew of the FCNA site, as well as a potential new planting located on the corner of Flagg Road and Carthage Road, the crew focused on species that would do well in mesic soils or wet conditions. When it came time to separate seed species, preference was given to the Mesic Seed Mix over the Dry Mesic Seed Mix. In past years, mesic species would simply be placed in the Dry Mesic Seed Mix.

Species Diversity				
Dry	Dry Mesic	Mesic	Wet	Woodland
63 species	71 species	50 species	57 species	34 species

Figure 2. Number of species in each seed mix.

➤ Dry (1 acre)

The Dry Seed Mix was spread out over the two hilltops located on the west end of the site. Tyler Pellegrini spread seed over the smaller north hill while Riley Nylin covered the larger southern hill. They covered the areas by driving in concentric circles until the loop was closed. Once the loop was closed, they proceeded to do it again for better coverage. After the two loops were finished, the remaining seed inside of the seeder was spread by random driving within the border of the specified area. *Hesperostipa spartea* (porcupine grass) was hand thrown in these two dry areas the following day.

➤ Dry Mesic (5 acres)

The Dry Mesic Seed Mix soils covered the west half of the site. Tyler Pellegrini seeded the northern half of the Dry Mesic area with Seeder #1 75% open. He used the same ‘two-loop, then random’ process used for the other mixes. Riley Nylin and Amanda Contreras covered the southern half using the same process. Riley pulled Seeder #3 which was 50% open and matched the seed output as Amanda’s seeder (#2) which was 75% open. The area consisted of the western boundary to the bottom of the hill sides.

➤ Mesic (15 acres)

The Mesic Seed Mix was spread all throughout the lower, flat areas located on the east half of the site. This area experiences occasional flooding from the creek. This area was the first to be seeded. All three trucks were lined up in a staggered formation, beginning at the Canada Rye edge. It was quickly observed that Seeder #3 (pulled by Riley Nylin) had a much higher output than the other two. It was adjusted to 50% open and the other two were left at 75% open. The first two passes were done in concentric circles. Since there were a couple of barrels left, we quickly dispersed the remaining seed in a random pattern. The seed dispersal was clearly obvious on the new fallen snow.

➤ Wet

According to initial mapping, there was approximately 1.2 acres of soils suitable for a Wet Seed Mix. Seed was set aside for this, but upon viewing the planting it was decided that the seed be planted elsewhere. The acreage was located within the flagged area that was reserved for future work. Instead of planting the precious hand-collected Wet Seed Mix in an area that was to be trampled by heavy machinery, it was saved for a higher quality overseeding area.

➤ Canada Rye border

The border was planted using Seeders #1 and #3, pulled by Tyler Pellegrini and Riley Nylin using Silver truck and Z truck, respectively. This was done on the second and last day of planting this site. The two trucks completed two passes around the perimeter of the site. Tyler then seeded the flagged area on the east boundary while Riley completed a third loop of the perimeter with her remaining seed. Four barrels of Canada rye were used to do this border and finish the flagged area.

Species List

Scientific Name	Common Name	Dry	Dry Mesic	Mesic	TOTAL LBS	Total lbs/ac
		Total lbs	Total lbs	Total lbs		
<i>Agrimonia parviflora</i>	Swamp Agrimony			0.010	0.010	0.0005
<i>Allium canadense</i>	Wild Onion		0.040		0.040	0.002
<i>Allium cernuum</i>	Nodding Wild Onion	2.900			2.900	0.161
<i>Amorpha canescens</i>	Leadplant	5.910	3.940		9.850	0.493
<i>Anemone canadensis</i>	Meadow Anemone			0.440	0.440	0.021
<i>Anemone cylindrica</i>	Thimbleweed	4.750			4.750	0.264
<i>Anemone virginianum</i>	Tall Thimbleweed	6.860			6.860	0.381
<i>Antennaria neglecta</i>	Field Cat's Foot	0.144			0.144	0.008
<i>Antennaria plantaginifolia</i>	Pussy Toes (Everlasting)	28.650			28.650	1.592
<i>Apocynum androsaemifolium</i>	Spreading Dogbane		1.155		1.155	0.048
<i>Apocynum sibiricum</i>	Prairie Indian Hemp		0.002		0.002	0.0001
<i>Arnoglossum atriplicifolia</i>	Pale Indian Plantain		4.400	6.600	11.000	0.498
<i>Asclepias amlexicaulis</i>	Sand Milkweed	0.014			0.014	0.001
<i>Asclepias syriaca</i>	Common Milkweed		0.683		0.683	0.028
<i>Asclepias tuberosa interior</i>	Butterfly Milkweed		0.008		0.008	0.0003
<i>Asclepias verticillata</i>	Whorled Milkweed	1.226			1.226	0.068
<i>Asclepias viridiflora</i>	Short Green Milkweed	0.010			0.010	0.001
<i>Astragalus canadensis</i>	Canadian Milk Vetch		3.100		3.100	0.129
<i>Baptisia alba</i>	White Wild Indigo			114.400	114.400	5.448
<i>Baptisia bracteata</i>	Cream Wild Indigo	2.600			2.600	0.144
<i>Besseyia bullii</i> ***	Kittentails	0.325			0.325	0.018
<i>Bouteloua curtipendula</i>	Side-Oats Grama		6.350		6.350	0.265
<i>Brickellia eupatoroides</i>	False Boneset	6.150	4.100		10.250	0.513
<i>Bromus kalmii</i>	Prairie Brome		61.821	26.495	88.316	3.838
<i>Carex bicknellii</i>	Copper-shouldered oval Sedge		1.965	4.585	6.550	0.300
<i>Carex vulpinoides</i>	Brown Fox Sedge			2.350	2.350	0.112
<i>Castilleja sessiliflora</i> **	Downy Yellow Painted Cup	3.350			3.350	0.186
<i>Ceanothus americanus</i>	New Jersey Tea		0.018		0.018	0.001

<i>Chamecrista fasciculata</i>	Partridge Pea			9.600	9.600	0.457
<i>Cirsium hillii</i> ***	Hill's Thistle		0.265		0.265	0.011
<i>Coreopsis lanceolata</i>	Sand Coreopsis	5.850			5.850	0.325
<i>Coreopsis palmata</i>	Prairie Coreopsis		8.225	8.225	16.450	0.734
<i>Coreopsis tripteris</i>	Tall Coreopsis		10.500	15.750	26.250	1.188
<i>Crocianthemum bicknellii</i>	Rock Rose	0.015			0.015	0.001
<i>Crocianthemum canadense</i>	Common Rockrose (Frostweed)		0.641		0.641	0.027
<i>Cuscuta pentagona</i>	Prairie Dodder			0.036	0.036	0.002
<i>Cyperus lupulinus (filiculmus)</i>	Slender Sand Sedge	0.044			0.044	0.002
<i>Dalea candidum</i>	White Prairie Clover		13.700		13.700	0.571
<i>Dalea foliosa</i>	Bushy prairie clover		0.012		0.012	0.001
<i>Dalea purpureum</i>	Purple Prairie Clover		48.050		48.050	2.002
<i>Danthonia spicata</i>	Poverty Oat Grass	1.000			1.000	0.056
<i>Desmodium canadense</i>	Showy Tick Trefoil		0.016		0.016	0.001
<i>Dichanthelium leibergii</i>	Prairie Panic Grass		0.078		0.078	0.003
<i>Dichanthelium perlongum</i>	Long-stalked Panic Grass		0.008		0.008	0.0003
<i>Dichanthelium scribnerium</i>	Scribner's Panic Grass		0.164		0.164	0.007
<i>Dichanthelium villosissimum</i>	Woolly White Panic Grass	0.443			0.443	0.025
<i>Dodecatheon meadia</i>	Shooting Star		2.080	3.120	5.200	0.235
<i>Drymocalis arguta</i>	Prairie Cinquefoil		6.550	6.550	13.100	0.585
<i>Echinacea pallida</i>	Pale Purple Coneflower		116.71 5	272.33 5	389.050	17.831
<i>Eragrostis spectabilis</i>	Purple Love Grass	0.055			0.055	0.003
<i>Erigeron strigosus</i>	Daisy Fleabane		5.150		5.150	0.215
<i>Eryngium yuccifolium</i>	Rattlesnake Master			57.250	57.250	2.726
<i>Euphorbia corollata</i>	Flowering Spurge	12.119			12.119	0.673
<i>Euthamia graminifolia</i>	Smooth Grass-leaved Goldenrod			10.700	10.700	0.510
<i>Galium boreale</i>	Northern Bedstraw			0.040	0.040	0.002
<i>Gaura biennis (longiflora)</i>	Common Gaura		0.038		0.038	0.002
<i>Gentiana alba</i>	Cream Gentian			10.600	10.600	0.505
<i>Gentiana andrewsii</i>	Bottle Gentian			1.600	1.600	0.076
<i>Gentiana purberulenta</i>	Prairie Gentian			0.011	0.011	0.001
<i>Geum triflorum</i>	Prairie Smoke	0.012			0.012	0.001
<i>Hasteola suaveolens</i>	Sweet-scented Indian Plantain			3.000	3.000	0.143
<i>Helianthus grosseserratus</i>	Sawtooth Sunflower			1.950	1.950	0.093
<i>Helianthus occidentalis</i>	Western Sunflower; Naked S.		6.850		6.850	0.285
<i>Helianthus pauciflorus</i>	Prairie Sunflower	1.724			1.724	0.096
<i>Heliopsis helianthoides</i>	False Sunflower; " Ox-eye "		7.450	7.450	14.900	0.665
<i>Hesperostipa spartea</i>	Porcupine Grass	0.275			0.275	0.015
<i>Heterotheca camporum</i>	Plains Golden Aster	2.250			2.250	0.125
<i>Heuchera richardsonii</i>	Prairie Alum root		1.195		1.195	0.050
<i>Hieracium gronovii</i>	Hairy Hawkweed	0.853			0.853	0.047
<i>Hypoxis hirsuta</i>	Yellow Star Grass	0.018			0.018	0.001
<i>Hystrix patula</i>	Bottlebrush Grass	0.417			0.417	0.023
<i>Ionactis linariifolia</i>	Stiff Aster (Flax-Leaved)	3.650			3.650	0.203
<i>Koeleria macrantha</i>	Prairie June Grass	36.960	24.640		61.600	3.080
<i>Krigia virginica</i>	Dwarf Dandelion	0.006			0.006	0.0003
<i>Lechea stricta</i>	Bushy Pinweed	0.366			0.366	0.020

<i>Lespedeza capitata</i> --	Round-headed Bush Clover		6.950		6.950	0.290
<i>Liatris aspera</i>	Rough Blazing-star	14.200			14.200	0.789
<i>Liatris cylindracea</i>	Dwarf Blazingstar	0.237			0.237	0.013
<i>Liatris pycnostachya</i>	Gayfeather; Prairie Blazing Star		12.120	36.360	48.48	2.236
<i>Linaria canadensis</i>	Blue Toadflax	0.004			0.004	0.0002
<i>Linum sulcatum</i>	Grooved Yellow Flax	0.015			0.015	0.001
<i>Lithospermum canescens</i>	Hoary Puccoon	0.003			0.003	0.0002
<i>Lithospermum incisum</i>	fringed puccoon	0.096			0.096	0.005
<i>Lobelia siphilitica</i>	Great Lobelia			0.583	0.583	0.028
<i>Lobelia spicata</i>	Pale-spike Lobelia			0.065	0.065	0.003
<i>Lupinus perennis</i>	Wild Lupine	9.150	9.150		18.300	0.890
<i>Minuartia michauxii</i>	Stiff Sandwort	0.002			0.002	0.0001
<i>Monarda fistulosa</i>	Wild Bergamot		9.700		9.700	0.404
<i>Monarda punctata villicualis</i>	Horse Mint	2.350			2.350	0.131
<i>Oenothera biennis canescens</i>	Common Evening Primrose	0.354			0.354	0.020
<i>Onosmodium molle</i>	Marbleseed		0.764		0.764	0.032
<i>Oxalis violacea</i>	Violet Wood-sorrel	0.013			0.013	0.001
<i>Panicum capillare</i>	Old Witch Grass	2.805	0.935		3.740	0.195
<i>Parthenium integrifolium</i>	Wild Quinine (Feverfew)		34.160	51.240	85.400	3.863
<i>Pedicularis canadensis</i>	Wood Betony		1.934	1.934	3.868	0.173
<i>Penstemon digitalis</i>	Foxglove Beardtongue			10.700	10.700	0.510
<i>Penstemon grandiflorus</i>	Large Flowered Beardtongue		0.183		0.183	0.008
<i>Penstemon hirsutus</i>	Hairy Beard tongue	8.170			8.170	0.454
<i>Phemeranthes rugospermum</i> ***	Sand Fameflower	0.001			0.001	0.0001
<i>Phlox bifida</i>	Sand Phlox	0.105			0.105	0.006
<i>Phlox pilosa</i>	Prairie phlox	0.001			0.001	0.0001
<i>Physocarpus opulifolius</i>	Ninebark		0.057		0.057	0.002
<i>Physostegia virginiana arenaria</i>	Prairie Obedient Plant		0.013		0.013	0.001
<i>Plantago aristata</i>	Largebracted Plantain	0.432			0.432	0.024
<i>Polygala incarnata</i> **	Pink Milkwort		0.001		0.001	0.0001
<i>Polygala polygama obtusata</i>	Purple Milkwort		0.024		0.024	0.001
<i>Polygala sanguinea</i>	Field Milkwort		0.024		0.024	0.001
<i>Polytaenia nuttallii</i>	Prairie Parsley		0.913		0.913	0.038
<i>Pseudognaphalium obtusifolium</i>	Sweet Everlasting	0.353			0.353	0.020
<i>Ptelea trifoliata</i>	Wafer Ash, Hop Tree		0.413		0.413	0.017
<i>Pulsatilla patens</i>	Pasque Flower	0.008			0.008	0.0004
<i>Pycnanthemum tenuifolium</i>	Narrow-leaved Mountain Mint			0.001	0.001	0.0001
<i>Pycnanthemum virginianum</i>	Mountain mint			10.600	10.600	0.505
<i>Ratibida pinnata</i>	Yellow Coneflower			12.600	12.600	0.600
<i>Rhus glabra</i>	Smooth Sumac		0.214		0.214	0.009
<i>Rosa carolina</i>	Pasture Rose	1.387	0.396	0.198	1.982	0.103
<i>Rudbeckia hirta</i>	Black-eyed Susan			13.000	13.000	0.619
<i>Rudbeckia subtomentosa</i>	Sweet Blackeyed Susan			9.667	9.667	0.460
<i>Rudbeckia triloba</i>	Brown Eyed Susan		0.721		0.721	0.030
<i>Ruellia humilis</i>	Wild Petunia		1.450		1.450	0.060
<i>Sambucus canadensis</i>	Elderberry		0.027		0.027	0.001
<i>Scutellaria parvula leonardi</i>	Small Skullcap	0.107			0.107	0.006

Senna hebecarpa	Wild Senna		0.200		0.200	0.008
Silene antirrhina	Sleepy Catchfly		0.153		0.153	0.006
Silene regia	Royal catchfly		0.008		0.008	0.0003
Silphium integrifolium	Rosinweed			8.750	8.750	0.417
Silphium laciniatum	Compass plant			11.350	11.350	0.540
Silphium perfoliatum	Cup-plant			9.700	9.700	0.432
Silphium terebinthaceum	Prairie Dock		15.585	36.365	51.950	2.381
Sisyrinchium albidum	Common Blue-eyed grass		0.088		0.088	0.004
Sisyrinchium campestre	prairie Blue-eyed Grass		0.392		0.392	0.016
Solidago missouriensis	Missouri Goldenrod		0.161		0.161	0.007
Spiranthes cernua	Nodding Ladies Tresses		0.011		0.011	0.0005
Spiranthes magnocamporum	Great Plains Ladies Tresses	0.005			0.005	0.0003
Strophostyles helvola	Trailing Fuzzy Bean			0.013	0.013	0.001
Symphotrichum novae-angliae	New England Aster			14.000	14.000	0.667
Symphotrichum sericeum	Silky Aster	1.500	1.500		3.000	0.146
Tephrosia virginiana	Goat's Rue	4.300	4.300		8.600	0.418
Tradescantia ohiensis	Ohio Spiderwort	21.760	108.800	87.040	217.600	9.887
Triosteum perfoliatum	Horse Gentian			1.063	1.063	0.051
Verbena hastata	Blue Vervain			4.035	4.035	0.192
Verbena stricta	Hoary Vervain		12.250		12.250	0.510
Viola pedata lineariloba	Birdsfoot Violet	0.196			0.196	0.011
Viola sagittata	Arrow-leaved violet	0.006			0.006	0.0003
Zizia aptera	Heart-leaved Meadow Parsnip			1.900	1.900	0.090
Zizia aurea	Golden Alexander			20.050	20.050	0.955
Seed Mixes (Combine & Hand)						
Little Bluestem Prairie Mixes	Combine	147.960	164.400		312.360	15.070
Dropseed Garden	Combine	49.150	19.660	29.490	98.300	4.778
Tall Grasses; Big Blue and Indian	Combine	93.390	93.390	93.390	280.170	13.527
Aster Mix; Sky Blue, Smooth Blue, etc	Combine	176.000	209.000		385.000	18.486
Canada Rye	Combine	30.000	100.000		130.000	5.833
Sally's Sedge Meadow Sedge Mix	Hand picked			4.005	4.005	0.191
2018 Dry Seed Mix		187.100			187.100	10.394
2018 Dry Mesic Seed Mix			236.250		236.250	9.844
TOTAL Pounds		880.106	1386.207	1032.032	3,298.33	
NUMBER OF SPECIES		63	71	50	184	

Figure 3. A list of the 184 different species that were included in the mixes of this planting. The total amounts are separated by which seed mix they were added to.

Lessons Learned

When driving the seeders on busy roads, it was helpful to strategically have the vehicle with the widest seeder driving in between the other two vehicles. This way, the driver in said vehicle can have a spotter in front and behind. Radio communication was frequent and incredibly helpful throughout the planting process. Also, checking and maintaining the seeders more frequently throughout the months before planting time is a good idea. There were no disastrous problems with them, but regular maintenance could prove to be beneficial.

After we finished Planting 131 at the corner of Flagg and Carthage Road, we labeled the seeders by number. A detailed summary of each seeder was written up by Riley Nylin and can be found in the document labeled Drop Seeder Descriptions on the T Drive.

Maps



Figure 4. A map showing the different soil types of the FCNA planting site. (Source: NRCS)

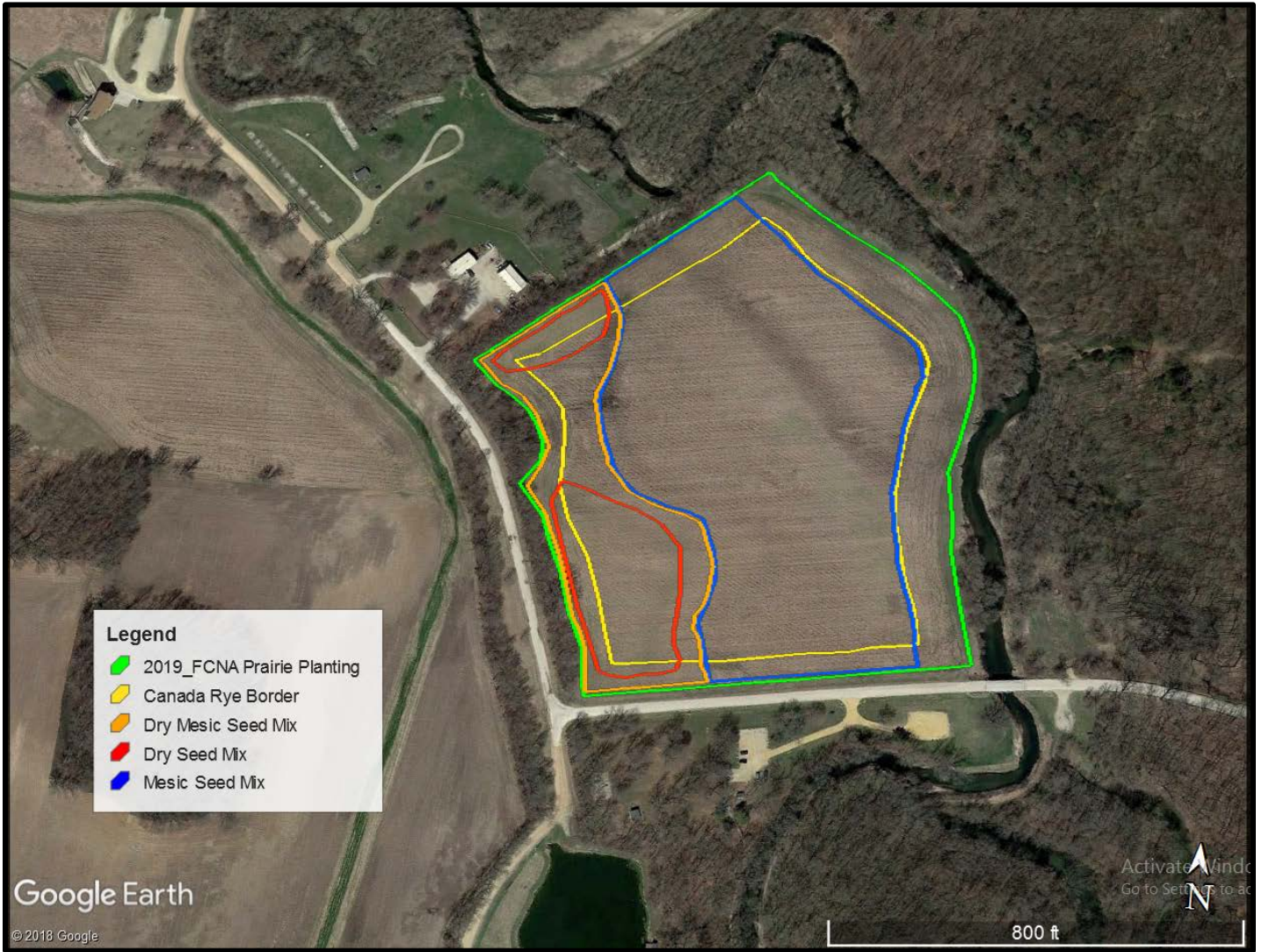


Figure 5. An aerial view of the seed mix distribution at the FCNA planting site. (Source: Google Earth)

Photos

All photos were taken by Riley Nylin on her nice new iPhone 11. Please enjoy.



Photo A. At the FCNA site staging area. Refilling our seeders after a couple loops around.



Photo B. Arriving at the future FCNA prairie planting. Note our lovely seed barrels. Tyler Pellegrini is standing left of silver truck and Amanda Contreras is stepping out of white truck.

ADDENDUM OF June 30, 2020 BY BILL KLEIMAN

DNR did not inform farmer Rick Appelquist that this field was to be planted to prairie. Local staff said it was a Springfield error. Wish we had asked farmer. He planted a cover crop of thick annual rye. He almost came out to spray the field when the local brush contractor alerted him to the signs we posted about it being a planting. Sigh. Photo below is the rye with Susan Kleiman up to her shoulder in it. The native seedlings are very suppressed. You have to work to find seedlings. With the same mix at our Flagg and Carthage Road planting the seedlings are huge and obvious and diverse. Painful.

