

Planting 137

2022 Planting History

Prepared by Molly Duncan

Summary

- Name: Juanita & Homer Williams Upland
- Date Planted: November 21, 2022
- Crew members:
 - Fall - Booker Moritz, Noah Reynolds, Derek Hofland, and Molly Duncan
 - Summer - Amber Denker, Emma Hovland, Katee Johnson, Dan Rabideau, Marissa Gorsegner, and Molly Duncan
- Site History: Row crops, planted into corn stubble
- Total Acreage: 10
 - Dry mesic mix: 10 acres at 59 lbs/acre
 - Dry mix: 2.5 acres at 35 lbs/acre
 - Total seeding rate of roughly 94 lbs/acre in these 2.5 acres
- Total # of species: 133
- Total amount of seed: 678 lbs.



Map A: Map showing the location of Planting 137.

Site Conditions

General location: On S Carthage Rd., directly north of Thelma Carpenter Prairie

GPS: 41°53'21.8"N, 89°19'22.0"W

County: Ogle (on border with Lee)

Soil Types

Map Unit Symbol	Map Unit Name	Acres in AOI	% of AOI
622C2	Wyanet silt loam, 5-10 % slopes, eroded	8.1	64.2
440B	Jasper loam, 2-5 % slopes	3.5	27.2
622B	Wyanet silt loam, 2-5 % slopes	1.1	8.3
102A	La Hogue loam, 0-2 % slopes	0.0	0.3
Totals for AOI		12.7	100.0%

Table 1: Soil types present within the planting (Source: NRCS Web Soil Survey)

Map B shows the soil distribution within the planting. The southern half of Thelma Carpenter Prairie has similar soil types and distribution.

Topography

The topography of the planting consists of a small hill in the northwest corner and a large hill in the middle which slopes down into the rest of the planting. The west boundary is the lowest point of the planting and runs roughly parallel to the field's old waterway. There is also a small waterway in the southeast corner of the planting.

Site History

This site has historically been row crops and was in corn before the crew planted it.

Site Preparation

The small waterway in the SE corner was sprayed with glyphosate at the end of September. The corn was harvested from the field in mid-November and the corn stubble and small waterway in the planting site were mowed with the batwing mower the next week. The boundary of the planting was then flagged, as well as the areas where the Dry and Dry Mesic I mixes were going.

The field's drainage tile was not removed because wetland scrapes are being planned for the western half of the field that wasn't planted. This year's planting site was specifically chosen because it's an upland and unlikely to be tiled.

Seed Mixes

The crew collected 168 species and handpicked over 1400 lbs. of seed this year. A total of 7 different seed mixes were made this year: Dry, Dry Mesic I, Dry Mesic II, Mesic, Wet, Woodland, and Step In. Because of the smaller size of this year's planting, the dry mesic species were divided into two different mixes. Only the Dry, Dry Mesic I, and Step In mixes were used in this planting. The Dry Mesic II, Mesic, Wet, and Woodland mixes will be used for overseeding in other locations.

Between the Dry, Dry Mesic I, and Step In mixes, 133 different species and over 670 lbs. of seed were planted at this year's site. **Map C** shows where each seed mix was planted.

2022 Seed Mixes		
	Species Diversity	Total lbs.
Dry	87	88
Dry Mesic I	85	555
Dry Mesic II	46	417
Mesic	39	353
Wet	21	67
Woodland	16	11
Step In	22	0.5

Table 2: Number of species in each seed mix and total poundage. Bolded mixes were used in this planting.

➤ **Dry** (2.5 acres, 88 lbs. total)

The Dry mix was planted at a rate of roughly 35 lbs/acre and was divided between two spots: the central hilltop and the SE corner. These two areas have particularly sandy soil and visible rocks/gravel on the surface. Because the Dry Mesic I mix was also planted in these areas, the total seeding rate for these 2.5 acres was roughly 94 lbs/acre.

➤ **Dry Mesic** (10 acres, 590 lbs. total)

The Dry Mesic I mix was planted at a rate of roughly 59 lbs/acre. The entire planting was planted with the Dry Mesic I mix to act as a base for the other mixes. A barrel of the Dry Mesic II mix was also used as extra towards the end of planting the Dry Mesic area.

➤ **Step In** (0.2 acres. 0.5 lbs. total)

The Step In mix consisted primarily of conservative species from which the crew collected only a small amount of seed from. It was planted by hand on the top of the main hill in addition to the Dry and Dry Mesic I mixes. A select few species were separated into a very dry Step In mix which was dispersed over the especially sandy/rocky areas within the Step In polygon. These species included: dwarf dandelion (*Krigia virginica*); slender sand sedge (*Cyperus lupulinus*); hairy grama (*Bouteloua hirsuta*); Eastern prickly pear (*Opuntia humifusa*); and fame flower (*Pemmeranthus rugospermus*).

Seed Planting

The planting was started on November 21 and completed on November 22. Both days were cold (around 45° F) and clear with modest winds.

The Dry and Dry Mesic I mixes were planted on November 21. The Dry mix was planted first using two of the broadcast seeders pulled by trucks. The seeders were initially adjusted to be 50% open. The two Dry polygons were given one pass of concentric circles, after which the seeders were adjusted to be 75% open. The trucks then split up so that there was only one seeder in each Dry polygon and drove in random patterns to disperse the rest of the seed.

The flags marking the border of the Dry polygons were then removed so that the Dry Mesic I mix could be dispersed across the entire planting. Three broadcast seeders were used to plant the Dry Mesic I mix.

Two passes around the perimeter of the planting were done to create a wide border to turn around in. The three trucks proceeded to do north-south transects followed by east-west transects. The seeders were kept at roughly 50% open. An extra barrel of the Dry Mesic II mix was added to the seeders towards the end of the day to heavily seed the small waterway in the SE corner of the planting. When planting both the Dry and Dry Mesic I mixes, the seeders were adjusted to be 100% open towards the end so that all the seed could be dispersed.

The next morning, on November 22, the Step In mix was dispersed by hand on the site's central hill top.

On January 13 of 2023, plains oval sedge (*Carex brevior*) and pasque flower (*Pulsatilla patens*) were dispersed by hand over a light layer of snow in the Step In polygon. These two species were acquired late in 2022 during a northern Illinois seed swap.

Lessons Learned

- Keep an eye on the seeding rate. The lever which controls the size of the holes tends to open/close as you drive if it isn't properly secured with a bungee cord.
- Using a GPS tracking app gave a good indication of which areas we'd covered as we planted. One truck used the app Strava on their phone (see **Map D**) and another truck used an old TeeJet GPS made for directing a tractor.
- It was helpful to use wire flags to mark the perimeter of areas where specific seed mixes were going.
- Having someone hop out of the trucks after each pass and place an orange cone to mark the edge of the transect helped give the lead truck a sense of where to go.

Maps



Map Unit Symbol	Map Unit Name	Acres in AOI
622C2	Wyanet silt loam, 5-10 % slopes, eroded	8.1
440B	Jasper loam, 2-5 % slopes	3.5
622B	Wyanet silt loam, 2-5 % slopes	1.1
102A	La Hogue loam, 0-2 % slopes	0.0

Map B: Map showing the distribution of soil types in the planting.



Map C: Map showing where the different seed mixes were planted.



Map D: Map showing the planting transects for the Dry Mesic (L) and Dry (R) polygons. GPS tracking was done using the app Strava.

Species List

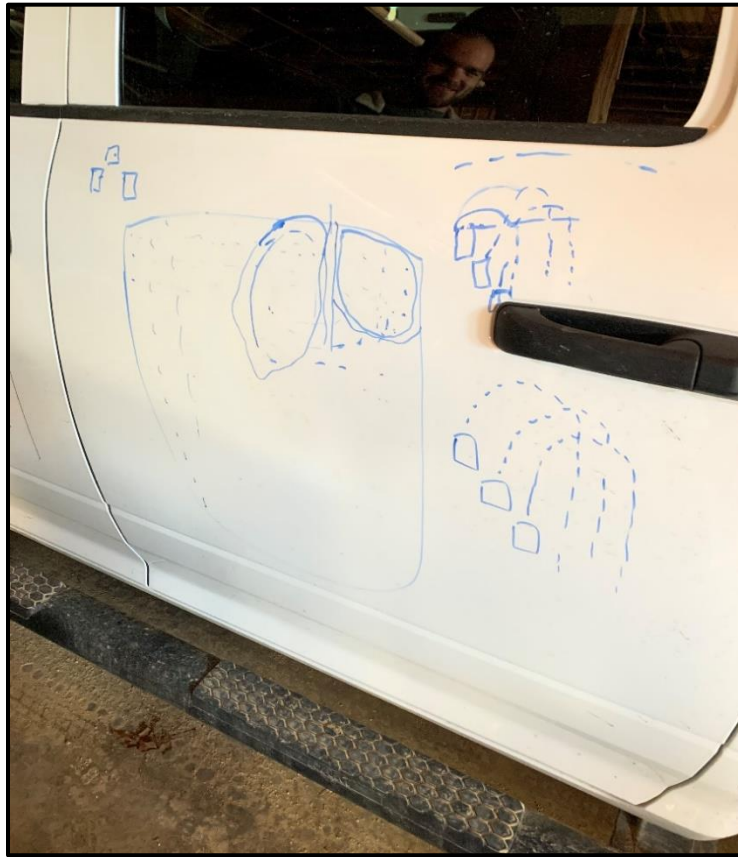
SCIENTIFIC NAME	COMMON NAME	Dry	Dry Mesic I	Step In	Total lbs	Total lbs/acre
<i>Allium cernuum</i>	Nodding Wild Onion	0.500	4.600		5.100	0.51
<i>Amorpha canescens</i>	Leadplant	4.000	18.000		22.000	2.2
<i>Anemone cylindrica</i>	Thimbleweed	0.350	0.360		0.710	0.071
<i>Antennaria neglecta</i>	Field Cat's Foot	0.320			0.320	0.032
<i>Antennaria plantaginifolia</i>	Pussy Toes (Everlasting)	1.000	2.000		3.000	0.3
<i>Aristida purpurea</i>	3 Awn Grass	0.190			0.190	0.019
<i>Arnoglossum atriplicifolia</i>	Pale Indian Plantain		2.700		2.700	0.27
<i>Arnoglossum plantaginea</i>	Indian Plantain		2.000		2.000	0.2
<i>Artemisia ludovicina</i>	White sage	0.820			0.820	0.082
<i>Asclepias amlexicaulis</i>	Sand Milkweed	0.050		0.060	0.110	0.011
<i>Asclepias syriaca</i>	Common Milkweed	0.500	1.000		1.500	0.15
<i>Asclepias tuberosa interior</i>	Butterfly Weed			0.016	0.016	0.0016
<i>Asclepias verticillata</i>	Whorled Milkweed	0.250	0.290		0.540	0.054
<i>Asclepias viridiflora</i>	Short Green Milkweed			0.001	0.001	0.0001
<i>Astragalus canadensis</i>	Canadian Milk Vetch	0.500	5.000		5.500	0.55
<i>Baptisia alba</i>	White Wild Indigo	0.500	20.000		20.500	2.05
<i>Baptisia bracteata</i>	Cream Wild Indigo	1.300	1.000		2.300	0.23
<i>Besseyia bullii</i>	Kittentails	0.250			0.250	0.025
<i>Blephili ciliata</i>	Downy Wood Mint		0.370		0.370	0.037
<i>Bouteloua curtipendula</i>	Side-Oats Grama	0.500	0.600		1.100	0.11
<i>Bouteloua hirsuta</i>	Hairy Grama			0.120	0.120	0.012
<i>Brickellia eupatoroides</i>	False Boneset	0.500	5.000		5.500	0.55
<i>Bromus kalmii</i>	Prairie brome	2.000	23.000		25.000	2.5
<i>Carex brevior</i>	Plains Oval Sedge			0.007	0.007	0.0007
<i>Callirhoe triangulata</i>	Clustered Poppy Mallow			0.001	0.001	0.0001
<i>Castilleja sessiliflora</i>	Downy Yellow Painted Cup	0.560			0.560	0.056
<i>Ceanothus americanus</i>	New Jersey Tea	0.500	0.700		1.200	0.12
<i>Chamecrista fasciculata</i>	Partridge Pea	0.500	10.000		10.500	1.05
<i>Cirsium hillii</i>	Hill's Thistle	0.140			0.140	0.014
<i>Coreopsis lanceolata</i>	Sand Coreopsis	1.000	1.900		2.900	0.29
<i>Coreopsis palmata</i>	Prairie Coreopsis	0.500	3.370		3.870	0.387
<i>Coreopsis tripteris</i>	Tall Coreopsis		2.000		2.000	0.2
<i>Crocantemum bicknellii</i>	Rock Rose	1.200	2.000		3.200	0.32
<i>Cyperus lupulinus (filiculmus)</i>	Slender Sand Sedge			0.096	0.096	0.0096
<i>Dalea candidum</i>	White Prairie Clover	2.000	6.200		8.200	0.82
<i>Dalea purpureum</i>	Purple Prairie Clover	2.000	12.000		14.000	1.4
<i>Danthonia spicata</i>	Poverty Oat Grass	0.370			0.370	0.037
<i>Dodecatheon meadia</i>	Shooting Star	0.500	7.000		7.500	0.75
<i>Drymocalis arguta</i>	Prairie Cinquefoil	0.800	8.000		8.800	0.88
<i>Echinacea pallida</i>	Pale Purple Coneflower	3.000	40.000		43.000	4.3
<i>Eragrostis spectabilis</i>	Purple Love Grass	0.020			0.020	0.002
<i>Erigeron strigosus</i>	Daisy Fleabane		1.940		1.940	0.194
<i>Eryngium yuccifolium</i>	Rattlesnake Master		5.700		5.700	0.57
<i>Eupatorium altissimum</i>	Tall Boneset	0.500	2.300		2.800	0.28
<i>Euphorbia corollata</i>	Flowering Spurge	1.000	5.720		6.720	0.672
<i>Euthamia graminifolia</i>	Smooth Grass-leaved Goldenrod	2.000	10.000		12.000	1.2
<i>Gaura biennis (longiflora)</i>	Common Gaura		0.003		0.003	0.0003
<i>Gentiana alba</i>	Cream Gentian		5.000		5.000	0.5

<i>Gentiana purberulenta</i>	Prairie Gentian	0.080		0.080	0.160	0.016
<i>Geum triflorum</i>	Prairie Smoke			0.008	0.008	0.0008
<i>Helianthus hirsutus</i>	Hispid sunflower		2.000		2.000	0.2
<i>Helianthus occidentalis</i>	Western Sunflower; Naked S.	0.500	3.600		4.100	0.41
<i>Helianthus pauciflorus</i>	Prairie Sunflower		0.500		0.500	0.05
<i>Heliopsis helianthoides</i>	False Sunflower; "Ox-eye"		0.200		0.200	0.02
<i>Hesperostipa spartea</i>	Porcupine Grass	0.456			0.456	0.0456
<i>Heterotheca camporum</i>	Plains Golden Aster	0.710			0.710	0.071
<i>Heuchera richardsonii</i>	Prairie Alum root	0.500	1.000		1.500	0.15
<i>Hieracium longipilum</i>	Long-Bearded Hawkweed	0.110			0.110	0.011
<i>Houstonia longifolia</i>	Long-Leaved Bluets			0.018	0.018	0.0018
<i>Hypoxis hirsuta</i>	Yellow Star Grass			0.005	0.005	0.0005
<i>Ionactis linariifolia</i>	Stiff Aster (Flax-Leaved)	1.000	3.000		4.000	0.4
<i>Juncus tenuis</i>	Path Rush		1.900		1.900	0.19
<i>Koeleria macrantha</i>	Prairie June Grass	3.000	14.300		17.300	1.73
<i>Krigia virginica</i>	Dwarf Dandelion			0.012	0.012	0.0012
<i>Lespedeza capitata</i>	Round-headed Bush Clover	1.000	15.000		16.000	1.6
<i>Lespedeza virginica</i>	Slender Bush Clover	0.280			0.280	0.028
<i>Liatris aspera</i>	Rough Blazing-star	4.000	15.000		19.000	1.9
<i>Liatris cylindracea</i>	Dwarf Blazingstar	0.300			0.300	0.03
<i>Liatris pycnostachya</i>	Gayfeather; Prairie Blazing Star		7.000		7.000	0.7
<i>Linaria canadensis</i>	Blue Toadflax			0.002	0.002	0.0002
<i>Linum sulcatum</i>	Grooved Yellow Flax			0.045	0.045	0.0045
<i>Lithospermum canescens</i>	Hoary Puccoon	0.042			0.042	0.0042
<i>Lithospermum croceum</i>	Hairy Puccoon	0.100			0.100	0.01
<i>Lithospermum incisum</i>	fringed puccoon	0.400			0.400	0.04
<i>Lobelia spicata</i>	Pale-spike Lobelia		0.085		0.085	0.0085
<i>Lupinus perennis</i>	Wild Lupine	1.000	4.240		5.240	0.524
<i>Monarda fistulosa</i>	Wild Bergamot		1.000		1.000	0.1
<i>Monarda punctata villicualis</i>	Horse Mint	0.500	2.000		2.500	0.25
<i>Oligoneuron rigidum</i>	Stiff Goldenrod	0.500	2.000		2.500	0.25
<i>Onosmodium molle</i>	Marbleseed		0.960		0.960	0.096
<i>Opuntia humifusa</i>	Prickly Pear Cactus			0.020	0.020	0.002
<i>Oxalis violacea</i>	Violet Wood-sorrel	0.050			0.050	0.005
<i>Packera plattensis</i>	Prairie Ragwort		0.740		0.740	0.074
<i>Panicum capillare</i>	Old Witch Grass	0.820			0.820	0.082
<i>Parthenium integrifolium</i>	Wild Quinine (Feverfew)	1.000	12.000		13.000	1.3
<i>Penstemon digitalis</i>	Foxglove Beardtongue	0.500	11.000		11.500	1.15
<i>Penstemon grandiflorus</i>	Large Flowered Beardtongue	0.230			0.230	0.023
<i>Penstemon hirsutus</i>	Hairy Beard tongue	2.000	5.500		7.500	0.75
<i>Phemeranthes rugospermum</i>	Sand Fameflower			0.003	0.003	0.0003
<i>Phlox pilosa</i>	Prairie phlox			0.002	0.002	0.0002
<i>Polygala polygama obtusata</i>	Purple Milkwort			0.001	0.001	0.0001
<i>Polygala sanguinea</i>	Field Milkwort		0.018		0.018	0.0018
<i>Polytaenia nuttallii</i>	Prairie Parsley	0.500	1.400		1.900	0.19
<i>Pulsatilla patens</i>	Pasque Flower			0.002	0.002	0.0002
<i>Pseudognaphalium obtusifolium</i>	Sweet Everlasting	0.007			0.007	0.0007
<i>Pycnanthemum tenuifolium</i>	Narrow-leaved Mountain Mint	1.000	7.000		8.000	0.8
<i>Pycnanthemum virginianum</i>	Mountain mint		2.000		2.000	0.2
<i>Ratibida pinnata</i>	Yellow Coneflower		1.000		1.000	0.1
<i>Rosa carolina</i>	Pasture Rose	0.880			0.880	0.088

Rudbeckia hirta	Black-eyed Susan	0.500	5.000		5.500	0.55
Ruellia humilis	Wild Petunia	0.600	1.000		1.600	0.16
Scrophularia lanceolata	Early figwort		0.300		0.300	0.03
Scutellaria parvula leonardi	Small Skullcap	0.015			0.015	0.0015
Silphium integrifolium	Rosinweed		5.000		5.000	0.5
Silphium laciniatum	Compass plant	1.000	10.000		11.000	1.1
Silphium terebinthaceum	Prairie Dock	1.000	10.000		11.000	1.1
Sisyrinchium albidum	Common Blue-eyed grass	0.047			0.047	0.0047
Solidago juncea	Early goldenrod	0.130			0.130	0.013
Solidago missouriensis	Missouri Goldenrod	0.600			0.600	0.06
Solidago nemoralis	Gray Goldenrod; Oldfield	1.000	3.300		4.300	0.43
Solidago speciosa	Showy Goldenrod	2.000	11.000		13.000	1.3
Sphenopholis obtusata	Prairie Wedge Grass		3.000		3.000	0.3
Spiranthes cernua	Nodding Ladies Tresses			0.003	0.003	0.0003
Symphotrichum ericoides	Heath Aster	2.000	5.000		7.000	0.7
Symphotrichum laeve	Smooth (Blue) Aster	1.000	5.600		6.600	0.66
Symphotrichum novae-angliae	New England Aster		1.000		1.000	0.1
Symphotrichum oblongifolius	Aromatic Aster	1.000	0.360		1.360	0.136
Symphotrichum oolentangiensis	Sky-blue Aster	1.000	1.400		2.400	0.24
Symphotrichum sericeum	Silky Aster	2.000	3.100		5.100	0.51
Tephrosia virginiana	Goat's Rue	2.000	10.000		12.000	1.2
Tradescantia ohiensis	Ohio Spiderwort	1.000	15.000		16.000	1.6
Verbena stricta	Hoary Vervain	0.250	2.000		2.250	0.225
Veronicastrum virginicum	Culver's Root		1.500		1.500	0.15
Viola pedata lineariloba	Birdsfoot Violet	0.169			0.169	0.0169
Viola pedatifida	Prairie Violet			0.014	0.014	0.0014
Viola sagittata	Arrow-leaved violet			0.002	0.002	0.0002
Zizia aptera	Heart-leaved Meadow Parsnip	1.000	0.600		1.600	0.16
Zizia aurea	Golden Alexander	1.000	15.000		16.000	1.6
Mixes and Combine						
Little Bluestem	Combine	10.000	65.000		75.000	7.5
Dropseed Garden	Combine	4.000	40.000		44.000	4.4
Canada Rye w/ beach wormwood	Combine	1.000	10.000		11.000	1.1
Upland Sunflowers (Helianthus sp.)	Handpicked		1.400		1.400	0.14
Dry Sedges (Carex spp.)	Handpicked	2.000	5.300		7.300	0.73

Table 3: List of species and the amounts that were included in the mixes used for this planting.

Photos



Picture A: A mock-up of the planting plan.



Photo B: Trucks in formation during the planting (Photo by Dee Hudson).



Photo C: Fall crew members, from L to R, Booker Moritz, Noah Reynolds, Derek Hofland, and Molly Duncan (Photo by Dee Hudson).