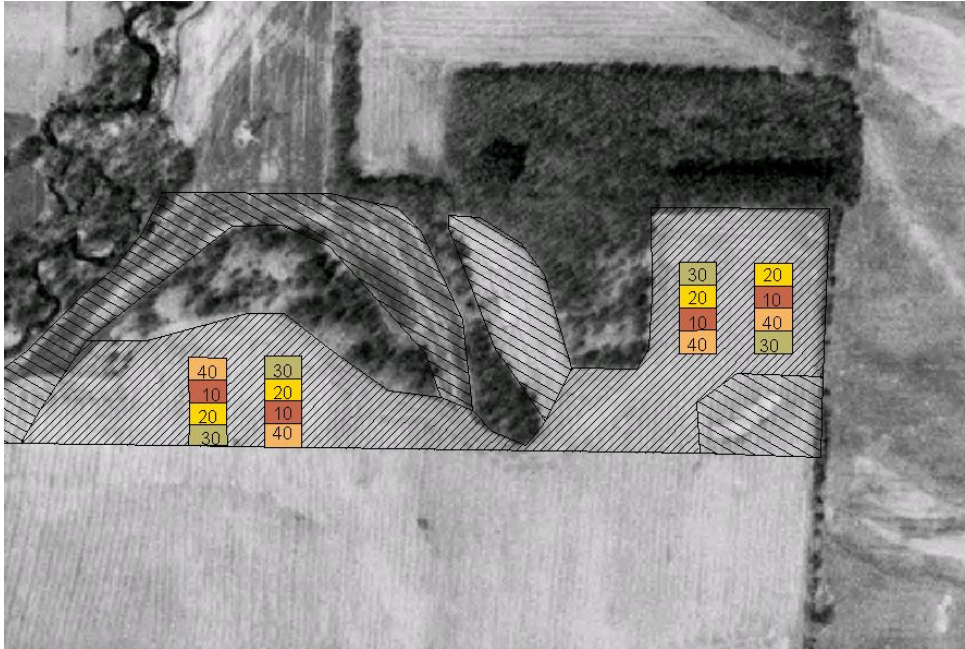


Planting #63 – Clear Creek Knolls (Dropseed Hills Buffer) - Fall of 2005

By Bill Kleiman

Description:

40 acre unit that is currently hay, row crops, remnant prairie and a wooded creek corridor. The unit is located in the Northern ½ of the SW ¼ quarter of the SE ¼ quarter and the Northern ½ of the SE ¼ quarter of the SW ¼ quarter Section 10 T 22N R10E. See Map below.



Map of the planting 63. The right leaning hash marks is the 15-acre dry seed mix area. The left leaning heavier hash marks is the 10-acre mesic seed mix area. The colored blocks was the seed rate experiment that did not work out as the driver could not control the rate of seed spread accurately enough.

History:

During the 2004-2005 crop season the fields were planted to corn. These areas we planted have been in row crop production for decades. Tree removal along the creek opened space for the wetland mix. Steward Mary Vieregg has been managing the Dropseed Hills area and collected 127 lbs of seed from 138 species for overseeding. Crew of Austin Saylor, Ryan Klopff, Nathan Hill, Bill Kleiman, Katie Schoenfeldt, Kelly Weise, Cody Considine, Adam Rex and Andy Muth collected the seed for this planting with a goal of 200 species.

Planting Description:

October 27, 2005 We burned off the 26 acres of corn stubble after we mowed it all down.

November 21, 2005 both dry and mesic mixes were spread with Airmax air seeder across the areas on the attached GPS maps. The remaining mix was over-seeded at HLP planting #62. Airmax seeding cost \$2,100

Specialty Seed Planting Needed:

Several bags of specialty seeds were planted by hand.

Seed:

Weight is calculated with the ADAM scale using 12lbs tare weight for barrel and lid

2005 Planting #63 at CCK

MIX	ACRES	FORB		GRASS*		TOTAL
		RATE #s/ac	TOTAL #s	RATE #s/ac	TOTAL #s	
DRY	15	20	300	9	135	435
MESIC	10	25	250	9	90	340
Total for AirMAXX			550		225	775
WET**	3	33	100			
TOTAL			650			875

** Hand Planted and planted with pendulum broadcast spreader.

This wet mix was planted along Clear Creek on the east side of the creek from the Bishop tract south to the creek ford.

*The mesic mix grass is about 40% Indian and Big Blue harvested by combine, the remaining 60% weight would be little bluestem.

The other grasses are in with all the forbs (Canada rye, northern dropseed, panicums...)

Total Crew Seed Collection for 2005:

883 lbs from 175 species for all of the forbs

250 lbs of Little Bluestem

500+ lbs of Big Blue and Indian

Seed mix species list:

Below is a list of all the species and their weights we collected. We collected 375 pounds of dry mix and planted 300 pounds of that on this planting 63 in the dry area. So the pounds listed for each species should be multiplied by 0.80. Where did the 20% of dry seed go? We over-seeded it onto HLP planting 62.

115 species in Dry Mix (We used 80% of this mix in this planting 63)

Scientific Name	Common Name	Dry lbs
Agrostis hymenalis	Tickle Grass	0.6
Allium cernuum	Nodding Wild Onion	0.12
Amelanchier humilis	Serviceberry	0.0125
Amorpha canescens	Leadplant	16.25
Anemone cylindrica	Thimbleweed	2.1
Antennaria plantaginifolia	Pussy Toes (Everlasting)	0.3378
Apocynum cannabinum (X medium)	Dogbane (Indian Hemp)	0.0625
Aristida purpurascens	Arrow Feather	5.325
Artemisia caudata (campestris)	Beach Wormwood	3.575
Asclepias syriaca	Common Milkweed	0.075
Asclepias verticillata	Whorled Milkweed	1.365
Aster azureus (oolentangiensis)	Sky-blue Aster	2.2
Aster ericoides (prostratus)	Heath Aster	6.42
Aster linariifolius	Stiff Aster (Flax-Leaved)	4.5225
Aster oblongifolius	Aromatic Aster	0.075
Aster ptarmicoides	White Aster (Stiff Aster)	0.0375
Aster sericeus	Silky Aster	1.6425

<i>Astragalus canadensis</i>	Canadian Milk Vetch	7.81
<i>Baptisia leucantha</i>	White Wild Indigo	17.45
<i>Baptisia leucophaea</i>	Cream Wild Indigo	4.70965
<i>Bouteloua curtipendula</i>	Side-Oats Grama	7.344
<i>Bouteloua hirsuta</i>	Hairy Grama	0.75
<i>Carex bicknellii</i>	Copper-shouldered oval Sedge	7.6128
<i>Carex muhlenbergii</i> (enervis)	Sand Bracted Sedge (Muhlenberg's)	3.2375
<i>Castilleja sessiliflora</i> **	Downy Yellow Painted Cup	1
<i>Ceanothus americanus</i>	New Jersey Tea	0.0625
<i>Chrysopsis camporum</i> (Heterothea)	Golden Prairie Aster	0.891
<i>Cirsium hillii</i> *** (pumilum)	Hill's Thistle	0.125
<i>Comandra umbellata</i> (richardsiana)	False Toadflax	0.313
<i>Coreopsis lanceolata</i>	Sand Coreopsis	0.18
<i>Coreopsis palmata</i>	Prairie Coreopsis	2.9628
<i>Coreopsis tripteris</i>	Tall Coreopsis	1.0688
Coyote Pt Mix		2.4
<i>Cyperus filiculmis</i>	Slender Sand Sedge	0.72
<i>Danthonia spicata</i>	Poverty Oat Grass	0.475
Delicious Medley		3.5
<i>Desmodium canadense</i>	Showy Tick Trefoil	0.4
<i>Desmodium illinoense</i>	Ill. Tick Trefoil	1
<i>Dodecatheon meadia</i>	Shooting Star	0.4314
<i>Echinacea pallida</i>	Pale Purple Coneflower	14.328
<i>Elymus canadensis</i>	Prairie Wild Rye	8.6625
<i>Eragrostis spectabilis</i>	Purple Love Grass	0.344
<i>Eryngium yuccifolium</i>	Rattlesnake Master	0.49
<i>Eupatorium altissimum</i>	Tall Boneset	1
<i>Eupatorium serotinum</i>	Late Boneset	1.2
<i>Euphorbia corollata</i>	Flowering Spurge	7.469
<i>Gentiana purberulenta</i>	Prairie Gentian	0.13125
<i>Geum triflorum</i>	Prairie Smoke (Long-plumed Purple Avens)	0.0625
<i>Gnaphalium obtusifolium</i>	Sweet Everlasting (Old-Field Balsam)	0.2625
Goldenrod mix		3.375
<i>Helianthemum canadense</i>	Common Rockrose (Frostweed)	1.320475
<i>Helianthus occidentalis</i>	Western Sunflower; Naked S.	7.506
<i>Helianthus rigidus</i> (laetiflorus)	Prairie Sunflower	0.25
<i>Heliopsis helianthoides</i>	False Sunflower; " Ox-eye "	3.4295
<i>Heuchera richardsonii</i> grayana	Rough Heuchera; Alum root	0.15
Hidden Prarie Mix		2.1
<i>Hieracium gronovii</i>	Hairy Hawkweed	0.35
<i>Juncus interior</i>	Inland Rush	4.6
<i>Juncus tenuis</i>	Path Rush	0.15

<i>Knaphaleum obtusifolium</i>	Sweet Everlasting	0.225
<i>Koeleria cristata (macrantha)</i>	Prairie June Grass	16.8
<i>Kuhnia (Brickellia) eupatoroides corymbulosa</i>	False Boneset	4.90875
<i>Lechea stricta</i>	Bushy Pinweed	0.3756
<i>Lechea tenuifolia</i>	Slender-Leaved Pinweed	1.375
<i>Lechea villosa (mucronata)</i>	Hairy Pinweed	0.4752
<i>Leptoloma cognatum</i>	Fall Witch Grass	3.85
<i>Lespedeza capitata --</i>	Round-headed Bush Clover	6.5625
<i>Lespedeza leptostachya ****</i>	Prairie Bush Clover	0.225
<i>Liatris aspera</i>	Rough Blazing-star (Rough Gayfeather)	17.615
<i>Liatris cylindracea</i>	Dwarf Blazingstar	0.1875
<i>Lithospermum canescens</i>	Hoary Puccoon	0.0625
<i>Lithospermum incisum</i>	Fringed (Narrow-leaved) Puccoon	0.125
<i>Lupinus perennis</i>	Wild Lupine	0.1875
Mix - Cor.qui, indigo		3.4
Mix o Stuff		0.264
<i>Monarda fistulosa</i>	Wild Bergamot	3.5
<i>Monarda punctata villicualis</i>	Horse Mint	2.625
<i>Oenothera biennis canescens</i>	Common Evening Primrose	0.3784
<i>Oenothera clelandii (rhombipetala)</i>	Sand Evening Primrose	0.175
<i>Onosmodium hispidissimum</i>	Marbleseed	0.175
<i>Opuntia humifusa (compressa)</i>	Prickly Pear Cactus	0.25
<i>Oxalis violacea</i>	Violet Wood-sorrel	0.2504
<i>Panicum depauperatum</i>	Starved Panic Grass	0.15
<i>Panicum leibergii</i>	Prairie Panic Grass	1.9878
<i>Parthenium integrifolium</i>	Wild Quinine (Feverfew)	11.5625
<i>Paspalum ciliatifolium muhlenbergii</i>	Hairy Lens Grass	0.42
<i>Penstemon digitalis</i>	Foxglove Beardtongue	9.4
<i>Penstemon hirsutus</i>	Hairy Beard tongue	0.3
<i>Petalostemum (Dalea) candidum</i>	White Prairie Clover	0.40625
<i>Petalostemum (Dalea) purpureum</i>	Purple Prairie Clover	12.075
<i>Physocarpus opulifolius</i>	Ninebark	0.2
<i>Polygala sanguinea</i>	Field Milkwort	0.0625
<i>Potentilla arguta</i>	Prairie Cinquefoil	14.875
<i>Prenanthes alba</i>	White Lettuce, Lion's Foot	0.03125
<i>Prunus americana</i>	Wild Plum	0.15
<i>Pycnanthemum virginianum</i>	Mountain mint (Prairie Hyssop)	0.3875
<i>Ratibida pinnata</i>	Yellow Coneflower	0.5
<i>Rosa carolina</i>	Pasture Rose	5.6
Rosin, Quinine,Compass Mix		1.125
<i>Rudbeckia hirta</i>	Black-eyed Susan	4.8375
Sand Farm mix		0.9191

Scutellaria parvula leonardi	Small Skullcap	0.0125
Silphium integrifolium	Rosinweed	3.5175
Silphium laciniatum	Compass plant	8.25
Sisyrinchium albidum	Common Blue-eyed Grass	0.45
Solidago (Euthamia) graminifolia nuttallii	Grass-leaved Goldenrod	4.6875
Solidago missouriensis fasciculata	Missouri Goldenrod	0.7
Solidago nemoralis	Gray Goldenrod; Oldfield	0.4
Solidago rigida	Stiff Goldenrod	0.5
Solidago speciosa	Showy Goldenrod	5
Sorghastrum nutans	Indian Grass	0.25
Spiranthes lacera	Slender Ladies Tresses	0.01
Sporobolus heterolepis	Prairie Dropseed	1.2096
Stipa spartea	Porcupine Grass	7.5
Talinum rugospermum ***	Sand Fameflower	0.25
TCP stripper Mix		8
Tephrosia virginiana	Goat's Rue	6.28125
Tradescantia ohiensis	Ohio Spiderwort	10.125
Triosteum aurantiacum	Early Horse Gentian (Orange-fruited)(Feverwort)(Tinker's Weed)	2.5
Unknown mix 2		7.0128
Unknown mix 3		0.875
Upland Mix		8
Verbena stricta	Hoary Vervain	2.34375
Viola pedata lineariloba	Birdsfoot Violet	0.0125
Wulfenia bullii *** (Besseyia)	Kittentails	0.1813
Zizia aptera	Heart-leaved Meadow Parsnip	0.25
Zizia aurea	Golden Alexanders	1.8125

122 species in Mesic Mix (Multiply weight here by 0.72 because we used 72% of this seed mix on this planting 63.)

SCIENTIFIC NAME	COMMON NAME	MESIC POUNDS
Actinomeris (Verbesina) alternifolia	Wingstem	0.775
Agalinis (Gerardia) tenuifolia	Slender False Foxglove	0.4126
Agrostis hymenalis	Tickle Grass	0.4
Allium cernuum	Nodding Wild Onion	0.84
Amorpha canescens	Leadplant	13
Amorpha fruticosa	Indigo Bush	1.925
Anemone canadensis	Meadow Anemone	0.0375
Anemone cylindrica	Thimbleweed	2.1
Angelica grandifolia	Great Angelica	0.15
Antennaria plantaginifolia	Pussy Toes (Everlasting)	0.2252

<i>Apocynum cannabinum</i> (X medium)	Dogbane (Indian Hemp)	0.1875
<i>Aristida purpurascens</i>	Arrow Feather	3.55
<i>Artemisia caudata</i> (campestris)	Beach Wormwood	2.925
<i>Asclepias syriaca</i>	Common Milkweed	0.05
<i>Asclepias verticillata</i>	Whorled Milkweed	1.26
<i>Aster ericoides</i> (prostratus)	Heath Aster	4.28
<i>Aster linariifolius</i>	Stiff Aster (Flax-Leaved)	1.5075
<i>Aster novae-angliae</i>	New England Aster	0.0375
<i>Aster oblongifolius</i>	Aromatic Aster	0.05
<i>Aster ptarmicoides</i>	White Aster (Stiff Aster)	0.025
<i>Aster sericeus</i>	Silky Aster	0.1825
<i>Astragalus canadensis</i>	Canadian Milk Vetch	11.715
<i>Baptisia leucantha</i>	White Wild Indigo	17.45
<i>Baptisia leucophaea</i>	Cream Wild Indigo	3.85335
<i>Bidens frondosa</i>	Beggar's Ticks	0.04
<i>Bouteloua curtipendula</i>	Side-Oats Grama	0.816
<i>Cacalia suaveolens</i>	Sweet-scented Indian Plantain	0.0375
<i>Callirhoe triangulata</i>	Clustered Poppy Mallow	0.03
<i>Carex bicknellii</i>	Copper-shouldered oval Sedge	5.0752
<i>Carex muhlenbergii</i> (enervis)	Sand Bracted Sedge (Muhlenberg's)	1.3875
<i>Carex vulpinoidea</i>	Brown Fox Sedge	0.0188
<i>Cassia hebecarpa</i>	Wild Senna	0.0078
<i>Ceanothus americanus</i>	New Jersey Tea	0.0625
<i>Chrysopsis camporum</i> (Heterotheca)	Golden Prairie Aster	0.297
<i>Cirsium discolor</i>	Pasture Thistle	0.0125
<i>Coreopsis lanceolata</i>	Sand Coreopsis	0.02
<i>Coreopsis palmata</i>	Prairie Coreopsis	1.9752
<i>Coreopsis tripteris</i>	Tall Coreopsis	7.4816
Coyote Pt Mix		1.6
<i>Cyperus filiculmis</i>	Slender Sand Sedge	0.08
Delicious Medley		5.25
<i>Desmodium canadense</i>	Showy Tick Trefoil	0.6
<i>Desmodium illinoense</i>	Ill. Tick Trefoil	1
<i>Dodecatheon meadia</i>	Shooting Star	0.2157
<i>Echinacea pallida</i>	Pale Purple Coneflower	14.328
<i>Elymus canadensis</i>	Prairie Wild Rye	8.6625
<i>Equisetum hyemale affine</i>	Tall Scouring Rush	0.1302
<i>Eragrostis spectabilis</i>	Purple Love Grass	0.2752
<i>Eryngium yuccifolium</i>	Rattlesnake Master	20.825
<i>Eupatorium altissimum</i>	Tall Boneset	1
<i>Eupatorium serotinum</i>	Late Boneset	0.3
<i>Euphorbia corollata</i>	Flowering Spurge	7.469
<i>Gaura biennis pitcheri</i> (longiflora)	Common Gaura	0.02
<i>Gentiana purberulenta</i>	Prairie Gentian	0.05625
<i>Gnaphalium obtusifolium</i>	Sweet Everlasting (Old-Field Balsam)	0.09375
Goldenrod mix		3.375
<i>Helenium autumnale</i>	Sneezeweed	3.09375
<i>Helianthemum canadense</i>	Common Rockrose (Frostweed)	0.60945

Helianthus grosseserratus	Sawtooth Sunflower	0.6405
Helianthus occidentalis	Western Sunflower; Naked S.	5.004
Helianthus rigidus (laetiflorus)	Prairie Sunflower	0.25
Heliopsis helianthoides	False Sunflower; " Ox-eye "	3.4295
Heuchera richardsonii grayana	Rough Heuchera; Alum root	0.05
Hidden Prairie Mix		1.4
Hieracium gronovii	Hairy Hawkweed	0.15
Hypericum pyramidatum	Great St. Johnswort	0.3
Juncus interior	Inland Rush	6.9
Juncus tenuis	Path Rush	0.45
Knapthaleum obtusifolium	Sweet Everlasting	0.15
Koeleria cristata (macrantha)	Prairie June Grass	11.2
Kuhnia (Brickellia) eupatoroides corymbulosa	False Boneset	4.71625
Lechea stricta	Bushy Pinweed	0.2504
Lechea villosa (mucronata)	Hairy Pinweed	0.4752
Leptoloma cognatum	Fall Witch Grass	1.65
Lespedeza capitata --	Round-headed Bush Clover	6.5625
Lespedeza leptostachya ****	Prairie Bush Clover	0.225
Liatris aspera	Rough Blazing-star (Rough Gayfeather)	8.13
Liatris pycnostachya	Tall Gayfeather; Prairie Blazing Star	0.53275
Lobelia spicata	Pale-spike Lobelia	0.225
Mix - Cor,qui, indigo		0.6
Mix o Stuff		0.176
Mixed wet sedges		0.0344
Monarda fistulosa	Wild Bergamot	3.5
Monarda punctata villicualis	Horse Mint	2.625
Oenothera biennis canescens	Common Evening Primrose	0.3096
Oenothera clelandii (rhombipetala)	Sand Evening Primrose	0.075
Onosmodium hispidissimum	Marbleseed	0.075
Panicum depauperatum	Starved Panic Grass	0.075
Panicum leibergii	Prairie Panic Grass	1.3252
Parthenium integrifolium	Wild Quinine (Feverfew)	11.5625
Paspalum ciliatifolium muhlenbergii	Hairy Lens Grass	0.28
Penstemon digitalis	Foxglove Beardtongue	14.1
Penstemon hirsutus	Hairy Beard tongue	0.175
Petalostemum (Dalea) candidum	White Prairie Clover	7.71875
Petalostemum (Dalea) purpureum	Purple Prairie Clover	8.05
Physocarpus opulifolius	Ninebark	0.1
Polygala sanguinea	Field Milkwort	0.0625
Polytaenia nuttallii	Prairie Parsley	0.025
Potentilla arguta	Prairie Cinquefoil	14.875
Prenanthes alba	White Lettuce, Lion's Foot	0.03125
Prunus americana	Wild Plum	0.15
Pycnanthemum virginianum	Mountain mint (Prairie Hyssop)	1.9375
Ratibida pinnata	Yellow Coneflower	0.5
Rosa carolina	Pasture Rose	2.4
Rosin, Quinine,Compass Mix		0.0625

Rudbeckia hirta	Black-eyed Susan	4.8375
Rudbeckia subtomentosa	Sweet Blackeyed Susan	1.25
Sand Farm mix		0.3939
Scirpus cyperinus	Wool Grass	0.65
Scrophularia marilandica	Late Figwort	0.01565
Silphium integrifolium	Rosinweed	1.5075
Silphium laciniatum	Compass plant	8.25
Silphium terebinthaceum	Prairie Dock	2.3545
Sisyrinchium albidum	Common Blue-eyed Grass	0.3
Solidago (Euthamia) graminifolia nuttallii	Grass-leaved Goldenrod	4.6875
Solidago missouriensis fasciculata	Missouri Goldenrod	0.3
Solidago nemoralis	Gray Goldenrod; Oldfield	0.4
Solidago rigida	Stiff Goldenrod	0.5
Solidago speciosa	Showy Goldenrod	4
Sorghastrum nutans	Indian Grass	0.375
Spiraea alba	Meadowsweet	0.825
Sporobolus heterolepis	Prairie Dropseed	1.344
TCP stripper Mix		2
Tephrosia virginiana	Goat's Rue	0.41875
Tradescantia ohiensis	Ohio Spiderwort	10.125
Triosteum aurantiacum	Early Horse Gentian (Orange-fruited)(Feverwort)(Tinker's Weed)	2.5
Unknown mix 1		6
Unknown mix 2		4.6752
Unknown mix 3		0.875
Upland Mix		8
Verbena hastata	Blue Vervain	1.63125
Verbena stricta	Hoary Vervain	0.78125
Vernonia fasciculata	Common Ironweed	0.2126
Veronicastrum virginicum	Culver's Root	4.75
Zizia aptera	Heart-leaved Meadow Parsnip	0.25
Zizia aurea	Golden Alexanders	1.8125

53 species in Wet Mix (All this wet mix went along the east side of Clear Creek from the Bishop line south to the creek ford).

SCIENTIFIC	COMMON	WET MIX Weight in LBS
Actinomeris (Verbesina) alternifolia	Wingstem	3.1
Agalinis (Gerardia) tenuifolia	Slender False Foxglove	1.6504
Agastache nepetoides	Yellow Giant Hyssop	0.7125
Agrimonia parviflora	Swamp Agrimony	0.5625
Allium cernuum	Nodding Wild Onion	0.24
Amorpha fruticosa	Indigo Bush	1.4
Anemone canadensis	Meadow Anemone	0.3375
Angelica grandifolia	Great Angelica	1.35
Apocynum cannabinum (X medium)	Dogbane (Indian Hemp)	0.0625

<i>Asclepias incarnata</i>	Swamp Milkweed	0.1875
<i>Aster novae-angliae</i>	New England Aster	0.15
<i>Baptisia leucantha</i>	White Wild Indigo	4.3625
<i>Bidens frondosa</i>	Beggar's Ticks	0.36
<i>Cacalia suaveolens</i>	Sweet-scented Indian Plantain	3.7125
<i>Caltha palustris</i>	Marsh Marigold	0.0625
<i>Carex vulpinoidea</i>	Brown Fox Sedge	0.0752
<i>Cassia hebecarpa</i>	Wild Senna	0.1482
<i>Chelone glabra</i>	Turtlehead	0.01
<i>Coreopsis tripteris</i>	Tall Coreopsis	2.1376
<i>Elymus canadensis</i>	Prairie Wild Rye	0.9625
<i>Elymus villosus</i>	Silky Wild Rye	0.45
<i>Equisetum hyemale affine</i>	Tall Scouring Rush	0.0558
<i>Eryngium yuccifolium</i>	Rattlesnake Master	3.185
<i>Eupatorium maculatum</i>	Spotted Joe Pye Weed	10.875
Fen Bridge Mix		6.2
<i>Galium borale</i>	Northern Bedstraw	0.313
<i>Gaura biennis pitcheri (longiflora)</i>	Common Gaura	0.18
<i>Gentiana (Gentianopsis) crinita</i>	Fringed Gentian	2.125
<i>Gentiana andrewsii</i>	Bottle (or Closed) Gentian	0.625
<i>Helenium autumnale</i>	Sneezeweed	9.28125
<i>Helianthus grosseserratus</i>	Sawtooth Sunflower	1.9215
<i>Hypericum pyramidatum</i>	Great St. Johnswort	4.7
<i>Juncus tenuis</i>	Path Rush	0.15
Left-over Mix		2.094
<i>Liatris pycnostachya</i>	Tall Gayfeather; Prairie Blazing Star	1.59825
<i>Lobelia spicata</i>	Pale-spike Lobelia	0.15
Mixed wet sedges		0.6536
<i>Parnassia glauca</i>	Grass of parnassus	0.1
<i>Pedicularis lanceolata</i>	Fen (Swamp) Betony; Lousewort	0.5
<i>Polytaenia nuttallii</i>	Prairie Parsley	0.1
<i>Pycnanthemum virginianum</i>	Mountain mint (Prairie Hyssop)	5.425
<i>Rudbeckia hirta</i>	Black-eyed Susan	0.5375
<i>Rudbeckia subtomentosa</i>	Sweet Blackeyed Susan	1.25
<i>Scirpus cyperinus</i>	Wool Grass	2.6
<i>Scrophularia marilandica</i>	Late Figwort	0.1565
<i>Silphium terebinthaceum</i>	Prairie Dock	0.4155
<i>Solidago patula</i>	Swamp Goldenrod	2.125
<i>Spartina pectinata</i>	Prairie Cord Grass	2.125
<i>Spiraea alba</i>	Meadowsweet	1.925
<i>Symplocarpus foetidus</i>	Skunk Cabbage	1.5
<i>Verbena hastata</i>	Blue Vervain	9.24375
<i>Verbena urticifolia</i>	Hairy White Vervain	0.375
<i>Vernonia fasciculata</i>	Common Ironweed	0.8504
<i>Veronicastrum virginicum</i>	Culver's Root	4.75
<i>Zizia aurea</i>	Golden Alexanders	1.8125
Wet Mix		0.44
TOTALS		102

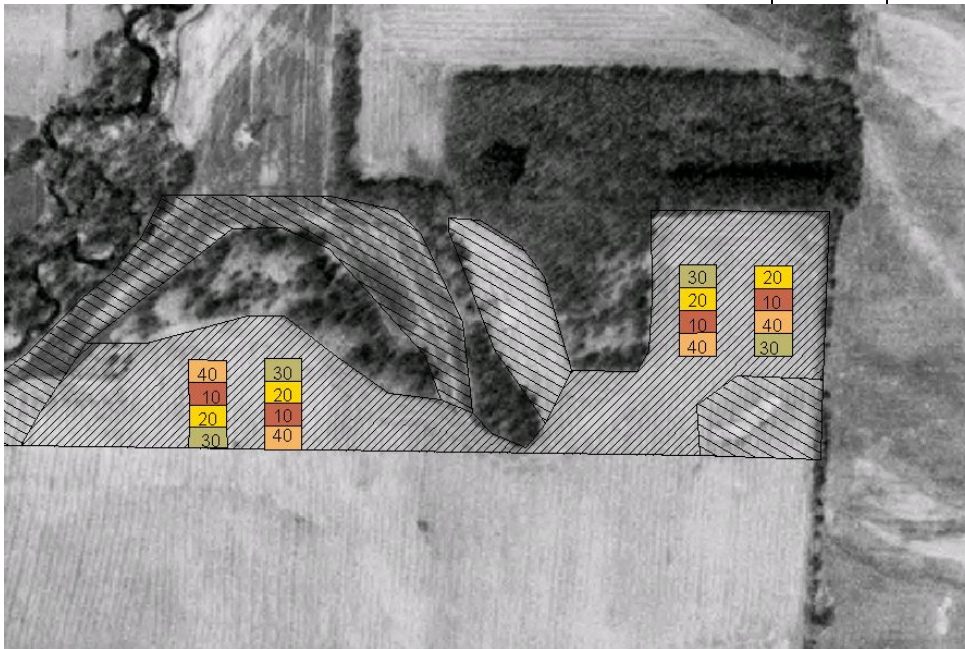
Study Plots Established:

How much seed is enough? We set up 4 random blocks (60'X100') with 4 rates of application in each (10, 20, 30 & 40 lbs/ac). Prior to planting the areas were flagged and colored to correspond to the application rates. See attached plot attachment maps. These blocks were seeded with the Airmaxx and was set with two settings full and 1/2 rate corresponding to the 20 and 10 lbs /ac for application. The 30 and 40 acre plots were done twice. During the airmaxx application in blocks CCKSP##3 and CCKSP##4 the airmaxx ran out of seed. The bin of the airmaxx was first filled with dry mix and the entire mesic mix was poured on top then the dry plots were finished.

Blocks #1 and #2 appear to have been planted correctly but overall this method did not work.

Overseeding Study for Planting #63 at CCK

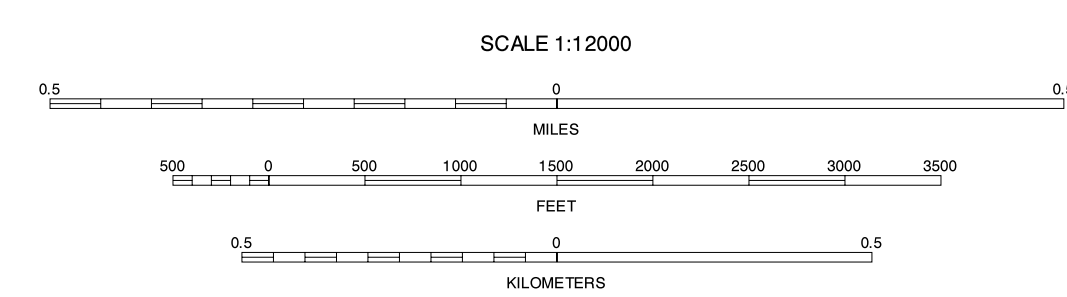
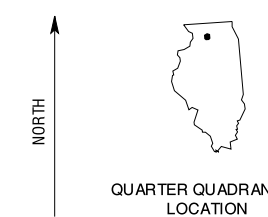
DRY MIX	ACRES	FORB		GRASS		TOTAL
		RATE #s/ac	TOTAL #s	RATE #s/ac	TOTAL #s	
LOW	0.6	10	6	3.1	1.86	8
MED	0.6	20	12	6.2	3.72	16
HI	0.6	30	18	9.3	5.58	24
VERY HIGH	0.6	40	24	12.4	7.44	31
			60		18.6	79





This soil survey was compiled by the U.S. Department of Agriculture, Natural Resources Conservation Service and cooperating agencies. Base maps are orthophotographs prepared by the U.S. Department of Interior, Geological Survey, from 1998 - 1999 aerial photography.

North American Datum of 1983 (NAD83), GRS-80 Spheroid 1000-meter ticks: Universal Transverse Mercator, zone 16. Coordinate grid ticks and land division data, if shown, are approximately positioned. Digital data are available for this quadrangle.



50	51	52	50 GRAND DETOUR NE
			51 DAYSVILLE NW
			52 DAYSVILLE NE
62			62 GRAND DETOUR SE
			64 DAYSVILLE SE
			A DIXON EAST NE
			B FRANKLIN GROVE NW
			C FRANKLIN GROVE NE

INDEX TO ADJOINING 3.75 MAPS

DAYSVILLE SW, ILLINOIS
3.75 MINUTE SERIES
SHEET NUMBER 63 OF 69

Soil map delineations extending beyond the dashed white quadrangle neartine are for reference only and are included on adjacent map sheets.

PLANTING INVENTORY

Date 7-30-2009

Page 1 of 3

Planting Name CCK Crew 2005

Planting Number 63

Where is the planting? CCK - Surrounds dropseed hills.

Approximate # acres 26 Hours in field w inventory 1.5

Recorders' names Bill Kleiman Scanned? _____

Total species observed? 69

Include a typed narrative done same day as inventory. Save both inventory and narrative as .pdf After the species name check off about how many plants you walked by. Not how many you could see in the distance. Note small plants too. This gives a rough sense of abundance.

Species Name (scientific name best)	1-5	6-24	25-50	51-100	100-1k	Comments
<i>Rudbeckia hirta</i>					✓	Too many.
<i>Aster pilosus</i>		✓				
<i>Monarda fistulosa</i>					✓	
<i>Koeleria macrantha</i>					✓	
<i>Potentilla arguta</i>					✓	Decreasing
<i>Carex bicknellii</i>			✓			
<i>Solidago speciosa</i>					✓	
<i>Aster ericoides</i>					✓	Great. Many patches.
<i>Anemone cylindrica</i>			✓			
<i>Silphium integrifolium</i>			✓			
<i>Helianthus grosseratus</i>		✓				
<i>Solidago rigida</i>			✓			
<i>Verbena stricta</i>			✓			
<i>Coreopsis tripteris</i>				✓		
<i>Solidago altissima</i>			✓			Invasive?
<i>Penstemon digitalis</i>					✓	
<i>Medicago lupulina</i>			✓			
<i>Ambrosia psilostachya</i>			✓			
<i>Elymus canadensis</i>		✓				
<i>Astragalus canadensis</i>				✓		
<i>Sorghastrum nutans</i>			✓			

Planting Name or area CCK Crew 05 Planting Number 63 Date 7-30-09

Species Name (scientific name best)	1-5	6-24	25-50	51-100	100-1k	Comments
<i>Desmodium canadense</i>		✓				
<i>Andropogon gerardii</i>			✓			
<i>Heliopsis helianthoides</i>			✓			
<i>Rattibida pinnata</i>					✓	
<i>Silphium perfoliatum</i>				✓		
<i>Echinacea pallida</i>					✓	
<i>Erigeron strigosus</i>	✓					
<i>Monarda punctata</i>	✓					
<i>Andropogon scoparius</i>					✓	Suggest we need more
<i>Sisyrinchium albidum</i>	✓					
<i>Equisetum hyemale</i>	✓					
<i>Senecio pauperulus</i>		✓				
<i>Solidago</i> g		✓				grass leaved but which?
<i>Liatris pycnostachya</i>		✓				
<i>Achillea millefolium</i>	✓					
<i>Aster azureus</i>	✓					
<i>Liatris asper</i>		✓				
<i>Solidago nemoralis</i>			✓			
<i>Aster linatifolius</i>	✓					
<i>Trifolium repens</i>		✓				
<i>Baptisia leucantha</i>		✓				
<i>Zizia aurea</i>	✓					
<i>Rubus occidentalis</i>	✓					
<i>Aster sericeus</i>		✓				
<i>Trifolium pratense</i>		✓				
<i>Silphium laciniatum</i>		✓				
<i>Prunus serotina</i>	✓					
<i>Aster lateriflorus</i>	✓					
<i>Coreopsis palmata</i>	✓					

NARRATIVE COMMENTS for planting 63 at Clear Creek Knolls Crew 2005 planting.
July 30, 2009 By Bill Kleiman

This planting looks great overall. I just read the 2005 planting history. We planted about 31 pounds per acre of a rich mix of seed. Then we added 10 more pounds per acre of a rich mix of seed on November 20, 2007. See the planting history document for these mixes.

The planting needs more grass, especially little bluestem. If our history is correct, we planted 9.6 pounds per acre on this planting, but it looks like we needed twice this amount. There was a reasonable showing of June grass, Indian grass, and big bluestem. The Canada rye has done its usual increase and now is much reduced to just a scattering. Bicknell's sedge was seen often. But still we need more grass. Every time Susan K sees it she comments it needs more grass. I say this because the remnants we see have more grass, and I think I have seen cool season exotic grasses fill the niche if we don't plant enough grass. The planting looks like a wildflower garden. A bison herd would starve.

Loved seeing all the heath aster. That was only 6 pounds over 26 acres but it is all over. Clonal composites are your friend.

I am surprised not to see one plant of the following heavily planted species. I list the plant name followed by what appears to be the pounds we planted on this 15 acres of dry mesic portion:

Lead plant 16, *Aristida purpurascens* (arrow feather) 5, cream indigo 5, side oats grama 7, golden aster 1, poverty oats 0.5, shooting star 0.5, flowering spurge 7, frostweed 1, hairy hawkweed 0.35, *Kuhnia eupatoides* 5 (I did not see it. Had to be there. I see *Eupatorium altissum*), pinweeds 2, round headed bushclover 6, *Panicum liebergii* (panic grass) 2.

On the mesic 10 acres areas there was no *Actinomeris* 1, indigo bush 2.

I did not see beach wormwood, even though, on year two it was super abundant.

We planted 1 pound *Coreopsis tripteris* in the dry mesic areas and it is now a dotting across the area. We planted 3 pounds *C. palmata* and I saw only one plant (but they are shorter so maybe there are more).

We did boldly add sawtooth sunflower to the mix and I saw a scattering of small patches in the upland areas.

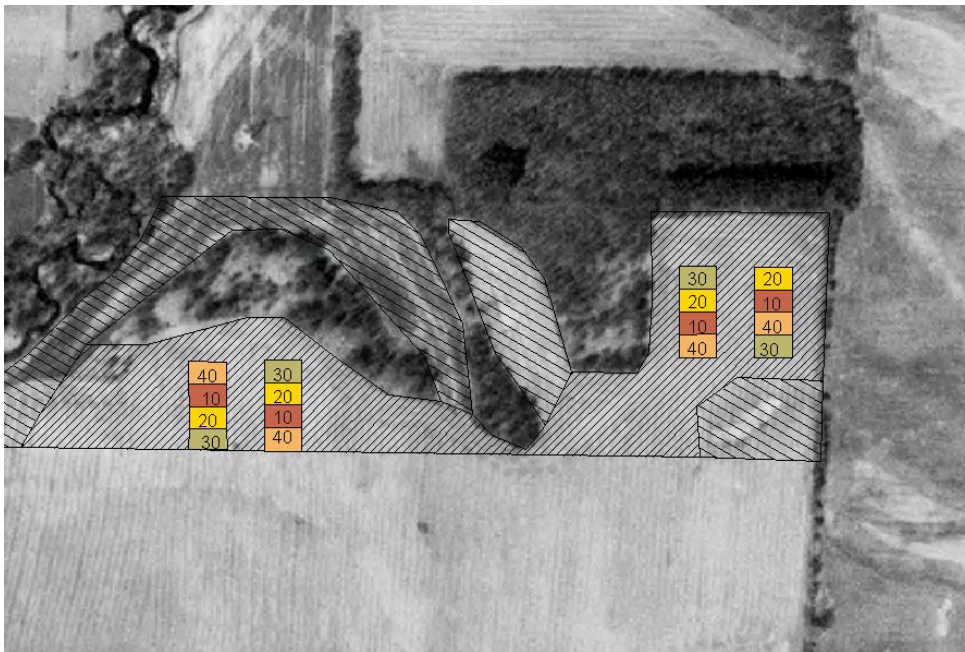
In this planting we set up and executed a seed rate study whereby the Airmax fertilizer truck was to blow in 10, 20, 30, and 40 pounds per acre in certain test areas. You can see these areas on the map below. But...the operator could not get the machine to turn off and on quick enough as he approached the flagged areas at 16 mph, and they forgot parts of a cell or two. So I would call that experiment not worth pursuing. I have not tried to go out and look for those areas but casual hiking through does not show differences.

We did do a nice seed rate study nearby and that worked very well. It suggested 50 pounds bulk weight seed per acre produces good results. We think we have about 40% weight of the mix is chaff.

Mary Vieregg gave great detailed feedback on this narrative. I save them to folder.

Suggested actions:

- Consider over-seeding with little bluestem, side oats, panicums, dropseed.
- No sweet clover seen, nor queen anne's lace. Saw a few yarrow. A few red clover but overall looks good. Keep up the red clover work as Mary V suggests.
- On this planting we "threw in the kitchen sink" of seed. Meaning, if we had a lot of black eyed susan, it went in the mix. Even though it was too much per acre and there are places where black eyed susans look to dominate. And just maybe they inhibit some of the finer plants we want to see growing. Too much also for false sunflower, and Penstemon digitalis. We did wisely hold back on yellow coneflower and bee balm and perhaps a few others. It would be better to get the proportions right and just plant less acres if we don't have the right weights of various species.



Map of the planting 63. The right leaning hash marks is the dry-mesic seed mix. The left leaning heavier hash marks is the mesic seed mix. The colored blocks was the seed rate experiment that did not work out.



A photo of planting 63 on July 30, 2009. Photos looks SSW towards Scherger farm. I am standing just south and near the east end of the dropseed hills remnant.

A few more thoughts about Planting 63:

By Mary Vieregg, steward of Dropseed Hills.

I've obviously thought about the Dropseed Hills degraded remnant plant communities and the crew planting around them (Planting 63) a lot as I've worked out there the last four years. The area south of Dropseed Hills is really quite different than the areas east, north, and west of the Hills as you know. The south community is generally less dense with more open soil space. You can walk through it and easily take note of individual plants. It's lower in stature, too, especially as midsummer rolls along into fall. The plant community to the east, north, and west of the Hills is intimidatingly lush and robust. Now in late summer, the plant height is almost head high, and it's difficult to walk through without tripping in the dense growth. As many people have noted, the plant communities on Dropseed Hills are different from either portion of Planting 63.

I know these differences reflect the two different seed mixes you used and the varied plant community histories on the individual Dropseed knolls, but I think it's fascinating to think about how it also reflects the differences in soil structure (which is probably why you planted two different mixes). South of Dropseed Hills, the soil is a complex of Rodman and Warsaw soils which are fairly shallow, excessively drained, loamy material over sand and gravel and not considered prime farmland. The soil complex itself is rated unfavorable for subsoil rooting (B810 Productivity Index (PI) = 87). To the north, east, and west of the Hills, though, you find Waukee Loam which is a deep mesic soil with moderate permeability. It is rated favorable for subsoil rooting with a PI = 97.

The soil of Dropseed Hills is Boone loamy fine sand. It's very shallow with sandstone bedrock within 20 inches of the surface. It's fairly acidic, too. Not surprisingly, it's not considered prime farmland (thus its degraded remnant status) with a PI of only 61.

This growing season, it has been interesting to see how the planting and the degraded remnant are interacting. Some species are obviously moving from the surrounding planting into the remnant especially in the swale areas between each knoll. Some species are moving from the remnant into the planting as well, e.g. blue-eyed grass on the west side, panicums in several areas, flowering spurge to the north. It should be fascinating to watch the interaction continue over the years, but I would predict that the approximately 30 acre area will never be a uniform community because of the underlying soil dictates.

Finishing up here, let me raise the red clover flag of warning once again. Most of the red clover I have seen is in the Waukee loam portions of the planting to the west, north, and east of Dropseed Hills. There's not a huge amount, but I strongly encourage you to attack it next year. I will help as I can, but I'm pretty maxed out with Dropseed Hills, the new Dropseed North planting, and all of the other places I work on the preserve.

Thanks for letting me share my wandering thoughts.

Mary

On Sun, Aug 2, 2009 at 9:14 PM, Mary Viereg mary@viereg.net wrote:
Hi Bill

I just read the narrative you wrote, and I found it pretty interesting especially because I often walk through the planting from different angles to get to Dropseed Hills. I have a few observations and a few more general thoughts to share.

I'm curious about the criteria you use to say the planting looks great (which I agree with). To me, biodiversity and sustainability are the two most important goals in doing a planting. I figure that a large number of plant species early on will support a large number of animal and microbial species, and as time goes by, the community will settle into a sustainable entity maintained by natural processes of fire, rain, freezing, insect pollination, inter- and intra-plant competition, etc. If this assumption of early biodiversity leading to eventual sustainability is correct, then the best way to evaluate an early planting is by measuring its diversity. This gets tricky because some plants show up early and then give way while others take some time to show up at all. For example, prairie gentian didn't show up in the Oak Knoll planting until the 3rd year, and shooting star didn't show up until year 6. There was lots of *Monarda punctata* the first year, but there's not too much now 7 years later. You mentioned the Canada rye and beech wormwood reducing in this planting, too.

It seems to me that seasonality has to be considered, too. Ideally, I think a planting should be evaluated in the spring, midsummer, and then again in the late summer/fall period. Some plantings look really wonderful in the spring but then not so great later on, and others just the opposite.

I think your concern about grass is interesting. I wouldn't worry about it too much. It seems to me that little bluestem finds its way in over time. I've seen it as I walk through the planting, and I think with time it will make more of a statement. Additionally, there's quite a bit of it and sideoats grama in certain parts of the Dropseed Hills remnant which will provide additional seed for the surrounding planting over time. There are also huge populations of the panic grasses on Dropseed Hills that I already see moving into the planting along the edges. It won't take too long for them to make more of a statement in the planting itself.

From a more philosophical point of view, why does there need to be a lot of grass? Why should we suppose that it is (or was) always present in any particular quantity or proportion in sustainable presettlement communities? I think plant communities have always formed largely by random introductory events of seed stock that responded to soil, weather, etc. particular to a given time and place. Surely not all presettlement plant communities had the same proportions of plant species. Perhaps bison might have passed the planting by, but it may be highly appealing to certain bird or small mammal species which might not flourish in a grassier planting. I don't think we know enough about all of these relationships to be able to make hard and fast judgements about what constitutes a "perfect" planting. And isn't it wonderful that Nachusa has enough space to have a broad mosaic of plantings and remnants to provide many different species with many different options?

Observations about a few of the heavily planted species you were surprised you did not see:

- 1) Cream indigo was slow showing up in the Oak Knoll planting and may still appear. It has a lot of competition, though, in a planting full of tall, robust mid-summer species.
- 2) Walking through the planting, I have seen golden aster. It's there but hard to see, again because of all of the tall mid-summer species.
- 3) There is quite a bit of flowering spurge on the Dropseed Hills remnant, and I have noticed it moving into the planting along the edges. I will keep my eyes open for it as I walk through the more central areas.

As for weeds:

- 1) I have found and pulled small amounts of Queen Anne's Lace and yarrow in the planting and not just near the edges of Dropseed Hills (where there was a shocking amount this year that we're diligently working on).
- 2) **Of greater concern is the red clover.** Its frequency merits more sweeping than was done this year. It could easily get away without multiple sweeps next growing season. I see a handful of plants each and every time I walk through the planting from whatever direction I approach, and it has the potential along the creekside two track to move aggressively east.

In summary, I agree that the planting has high native species diversity and low non-native populations. It's a joy to experience it as much as I do.

-Mary Vieregg