

Updated: 10/1/17

## QUGA DELUXE MIX 1

### Calculations To Determine if a Seed Mix Meets 327-Conservation Cover Standard

			327 Minimum Requirements Seeds/ft <sup>2</sup>			
		<b>Seed Mix</b>	Native Grass and Forb Seedings		Pollinator Seedings	
		<b>Totals</b>	slopes less than 5%	slopes 5% or greater	slopes less than 5%	slopes 5% or greater
<b>Total Grasses</b>		<b>15.00</b>	<b>10</b>	<b>20</b>	<b>5</b>	<b>10</b>
<b>Total Forbs &amp; Legumes</b>		<b>5.01</b>	<b>5</b>	<b>5</b>	<b>15</b>	<b>30</b>
<b>Total Grasses, Forbs/Legumes</b>		<b>20.01</b>	<b>20</b>	<b>30</b>	<b>20</b>	<b>40</b>

### Native Plant Species

			<b>Input Amount</b>			
			<b>in Mix</b>	<b>Seeds Per</b>		
<b>Grasses ,rushes, and sedges:</b>			<b>(PLS lb/ac)</b>	<b>Sq.Ft.</b>		<b>Moisture Regime</b>
<u>Common Name</u>	<u>Scientific Name</u>	<u>Seeds/lb.</u>				
Big bluestem	Andropogon gerardii	130000	1.5	4.48		D,DM,M,WM
Beaked panicgrass	Panicum anceps	525000	0.249	3.00		WM, W
Switchgrass	Panicum virgatum	400000	0.56	5.14		D,DM,M,WM
Virginia wildrye (cool season)	Elymus virginicus	75000	1.38	2.38		WM,W
					<b>Forbs</b>	
<b>Forbs:</b>			<b>(Lbs. or Oz.)</b>		<b>Per</b>	
<u>Common Name</u>	<u>Scientific Name</u>	<u>Seeds/Oz</u>	<u>Lbs.</u>	<u>Oz.</u>	<u>Sq. Ft.</u>	<u>Moisture Regime</u>
Aster, Smooth blue	Symphotrichum laeve	50000	0.063		1.16	DM,M,WM
Black-eyed Susan	Rudbeckia hirta	93750	0.063		2.17	D,DM,M,WM
Blazingstar, Marsh	Liatris spicata	11000	0.069		0.28	M,WM,W
Brown-eyed Susan	Rudbeckia triloba	35000	0.065		0.84	DM,M,WM
Partridge Pea	Chamaecrista fasciculata	3100	0.5		0.57	D,DM,M

**QUGA DELUXE MIX 2**

**Calculations To Determine if a Seed Mix Meets 327-Conservation Cover Standard**

		<b>Seed Mix</b>	<b>327 Minimum Requirements Seeds/ft<sup>2</sup></b>			
			Native Grass and Forb Seedings		Pollinator Seedings	
		<b>Totals</b>	slopes less than 5%	slopes 5% or greater	slopes less than 5%	slopes 5% or greater
<b>Total Grasses</b>		<b>25.00</b>	<b>10</b>	<b>20</b>	<b>5</b>	<b>10</b>
<b>Total Forbs &amp; Legumes</b>		<b>5.02</b>	<b>5</b>	<b>5</b>	<b>15</b>	<b>30</b>
<b>Total Grasses, Forbs/Legumes</b>		<b>30.02</b>	<b>20</b>	<b>30</b>	<b>20</b>	<b>40</b>

**Native Plant Species**

			<b>Input Amount</b>			
			<b>in Mix</b>	<b>Seeds Per</b>		
<b>Grasses ,rushes, and sedges:</b>						
<u><b>Common Name</b></u>	<u><b>Scientific Name</b></u>	<u><b>Seeds/lb.</b></u>	<u><b>(PLS lb/ac)</b></u>	<u><b>Sq.Ft.</b></u>		<u><b>Moisture Regime</b></u>
Composite Dropseed	Sporobolus compositus (S. asper)	480000	0.307	3.38		D, DM, M
Little bluestem	Schizachyrium scoparium	255000	2.5	14.63		D,DM,M
Sideoats grama	Bouteloua curtipendula	190000	1.6	6.98		D,DM
					<b>Forbs</b>	
<b>Forbs:</b>			<b>(Lbs. or Oz.)</b>		<b>Per</b>	
<u><b>Common Name</b></u>	<u><b>Scientific Name</b></u>	<u><b>Seeds/Oz</b></u>	<u><b>Lbs.</b></u>	<u><b>Oz.</b></u>	<u><b>Sq. Ft.</b></u>	<u><b>Moisture Regime</b></u>
Black-eyed Susan	Rudbeckia hirta	93750	0.063		2.17	D,DM,M,WM
Illinois Bundleflower	Desmanthus illinoensis	3800	0.25		0.35	D,DM
Ox-Eye or False sunflower	Heliopsis helianthoides	6500	0.125		0.30	DM,M,WM
Partridge Pea	Chamaecrista fasciculata	3100	0.25		0.28	D,DM,M
Purple coneflower	Echinacea purpurea	6600	0.188		0.46	DM,M,WM
Purple Prairie Clover	Dalea purpureum	17000	0.234		1.46	D,DM,M

**QUGA DELUXE MIX 3**

**Calculations To Determine if a Seed Mix Meets 327-Conservation Cover Standard**

	Seed Mix	327 Minimum Requirements Seeds/ft <sup>2</sup>				
		Native Grass and Forb Seedings			Pollinator Seedings	
		Totals	slopes less than 5%	slopes 5% or greater	slopes less than 5%	slopes 5% or greater
Total Grasses	15.00	10	20	5	10	
Total Forbs & Legumes	5.02	5	5	15	30	
Total Grasses, Forbs/Legumes	20.02	20	30	20	40	

**Native Plant Species**

		Input Amount				
Grasses ,rushes, and sedges:		in Mix	Seeds Per			
<u>Common Name</u>	<u>Scientific Name</u>	<u>Seeds/lb.</u>	<u>(PLS lb/ac)</u>	<u>Sq.Ft.</u>	<u>Moisture Regime</u>	
Composite Dropseed	Sporobolus compositus (S. asper)	480000	0.275	3.03	D, DM, M	
Little bluestem	Schizachyrium scoparium	255000	1.315	7.70	D,DM,M	
Sideoats grama	Bouteloua curtipendula	190000	0.98	4.27	D,DM	
Forbs:		(Lbs. or Oz.)			Per	
<u>Common Name</u>	<u>Scientific Name</u>	<u>Seeds/Oz</u>	<u>Lbs.</u>	<u>Oz.</u>	<u>Sq. Ft.</u>	<u>Moisture Regime</u>
Black-eyed Susan	Rudbeckia hirta	93750	0.063		2.17	D,DM,M,WM
Illinois Bundleflower	Desmanthus illinoensis	3800	0.25		0.35	D,DM
Ox-Eye or False sunflower	Heliopsis helianthoides	6500	0.125		0.30	DM,M,WM
Partridge Pea	Chamaecrista fasciculata	3100	0.25		0.28	D,DM,M
Purple coneflower	Echinacea purpurea	6600	0.188		0.46	DM,M,WM
Purple Prairie Clover	Dalea purpureum	17000	0.234		1.46	D,DM,M

**QUGA DELUXE MIX 4****Calculations To Determine if a Seed Mix Meets 327-Conservation Cover Standard**

	Seed Mix	327 Minimum Requirements Seeds/ft <sup>2</sup>				
		Native Grass and Forb Seedings		Pollinator Seedings		
	Totals	slopes less than 5%	slopes 5% or greater	slopes less than 5%	slopes 5% or greater	
Total Grasses	15.01	10	20	5	10	
Total Forbs & Legumes	5.02	5	5	15	30	
Total Grasses, Forbs/Legumes	20.03	20	30	20	40	

**Native Plant Species**

		Input Amount				
Grasses ,rushes, and sedges:		in Mix	Seeds Per			
<u>Common Name</u>	<u>Scientific Name</u>	<u>Seeds/lb.</u>	<u>(PLS lb/ac)</u>	<u>Sq.Ft.</u>	<u>Moisture Regime</u>	
Big bluestem	Andropogon gerardii	130000	0.4	1.19	D,DM,M,WM	
Indiangrass	Sorghastrum nutans	170000	0.25	0.98	D,DM,M	
Little bluestem	Schizachyrium scoparium	255000	1.41	8.25	D,DM,M	
Switchgrass	Panicum virgatum	400000	0.5	4.59	D,DM,M,WM	
Forbs:		(Lbs. or Oz.)		Forbs Per		
<u>Common Name</u>	<u>Scientific Name</u>	<u>Seeds/Oz</u>	<u>Lbs.</u>	<u>Oz.</u>	<u>Sq. Ft.</u>	<u>Moisture Regime</u>
Black-eyed Susan	Rudbeckia hirta	93750	0.063		2.17	D,DM,M,WM
Illinois Bundleflower	Desmanthus illinoensis	3800	0.25		0.35	D,DM
Ox-Eye or False sunflower	Heliopsis helianthoides	6500	0.125		0.30	DM,M,WM
Partridge Pea	Chamaecrista fasciculata	3100	0.25		0.28	D,DM,M
Purple coneflower	Echinacea purpurea	6600	0.188		0.46	DM,M,WM
Purple Prairie Clover	Dalea purpureum	17000	0.234		1.46	D,DM,M

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## QUGA DELUXE MIX 5A

### Calculations To Determine if a Seed Mix Meets 327-Conservation Cover Standard

	Seed Mix	327 Minimum Requirements Seeds/ft <sup>2</sup>			
		Native Grass and Forb Seedings		Pollinator Seedings	
		slopes less than 5%	slopes 5% or greater	slopes less than 5%	slopes 5% or greater
	<b>Totals</b>				
<b>Total Grasses</b>	<b>5.00</b>	<b>10</b>	<b>20</b>	<b>5</b>	<b>10</b>
<b>Total Forbs &amp; Legumes</b>	<b>15.00</b>	<b>5</b>	<b>5</b>	<b>15</b>	<b>30</b>
<b>Total Grasses, Forbs/Legumes</b>	<b>20.00</b>	<b>20</b>	<b>30</b>	<b>20</b>	<b>40</b>

### Native Plant Species

		Input Amount	Seeds Per				
Grasses ,rushes, and sedges:		in Mix	Sg.Ft.				
<u>Common Name</u>	<u>Scientific Name</u>	<u>Seeds/lb.</u>	<u>(PLS lb/ac)</u>	<u>Sq.Ft.</u>	<u>Moisture Regime</u>		
Little bluestem	Schizachyrium scoparium	255000	0.63	3.69	D,DM,M		
Sideoats grama	Bouteloua curtipendula	190000	0.3	1.31	D,DM		
Forbs:		(Lbs. or Oz.)	Per				
<u>Common Name</u>	<u>Scientific Name</u>	<u>Seeds/Oz</u>	<u>Lbs.</u>	<u>Oz.</u>	<u>Sq. Ft.</u>	<u>Bloom Period</u>	<u>Moisture Regime</u>
Aster, Smooth blue	Symphyotrichum laeve	50000	0.017		0.31	L	DM,M,WM
Black-eyed Susan	Rudbeckia hirta	93750	0.063		2.17		D,DM,M,WM
Evening primrose	Oenothera biennis	86000	0.085		2.69		D,DM,M
Golden alexanders	Zizia aurea	12000	0.063		0.28	E-M	M,WM
Goldenrod, Rigid or stiff	Solidago rigida	41000	0.02		0.30	L	D,DM,M,WM
Illinois Bundlesflower	Desmanthus illinoensis	3800	0.581		0.81		D,DM
Lance leaf coreopsis	Coreopsis lanceolata	20000	0.5		3.67		D,DM
Ox-Eye or False sunflower	Heliopsis helianthoides	6500	0.281		0.67		DM,M,WM
Partridge Pea	Chamaecrista fasciculata	3100	0.5		0.57	M-L	D,DM,M
Prairie cinquefoil (potentilla)	Potentilla arguta	230000	0.01		0.84		D,DM,M
Purple coneflower	Echinacea purpurea	6600	0.75		1.82	M-L	DM,M,WM
Spiderwort	Tradescantia ohimensis	8000	0.103		0.30	E-M	D,DM,M

### QUGA DELUXE MIX 5A Continued

Tick-trefoil, showy	Desmodium canadense	5500	0.147		0.30	M-L	DM,M,WM
Wild blue indigo	Baptisia australis	1500	0.25		0.14	E-M	D,DM,M,WM
Wild Lupine	Lupinus perennis	1400	0.25		0.13	E-M	D,DM,M
<b><u>Pollinator Blooming Period</u></b>		<b>Moisture Regime</b>		<b>Soil Drainage Class</b>			
<b>E</b> =Early Bloom Period- <i>April through Mid June</i>		D=Dry		excessively drained			
<b>M</b> =Mid Bloom Period- <i>Mid June through July</i>		DM=Dry Mesic		moderately well drained			
<b>L</b> =Late Bloom Period- <i>August through October</i>		M=Mesic		well drained			
<b>E-M</b> =Species bloom period overlaps early and mid		WM=Wet Mesic		somewhat poorly drained,			
<b>M-L</b> =Species bloom period overlaps mid and late		W=Wet		very poorly drained, poorly drained			

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## QUGA DELUXE MIX 5B

### Calculations To Determine if a Seed Mix Meets 327-Conservation Cover Standard

	Seed Mix	327 Minimum Requirements Seeds/ft <sup>2</sup>			
		Native Grass and Forb Seedings		Pollinator Seedings	
		slopes less than 5%	slopes 5% or greater	slopes less than 5%	slopes 5% or greater
	<b>Totals</b>				
<b>Total Grasses</b>	<b>5.00</b>	<b>10</b>	<b>20</b>	<b>5</b>	<b>10</b>
<b>Total Forbs &amp; Legumes</b>	<b>15.01</b>	<b>5</b>	<b>5</b>	<b>15</b>	<b>30</b>
<b>Total Grasses, Forbs/Legumes</b>	<b>20.01</b>	<b>20</b>	<b>30</b>	<b>20</b>	<b>40</b>

### Native Plant Species

		Input Amount					
Grasses ,rushes, and sedges:		in Mix	Seeds Per				
<u>Common Name</u>	<u>Scientific Name</u>	<u>Seeds/lb.</u>	<u>(PLS lb/ac)</u>	<u>Sq.Ft.</u>	<u>Moisture Regime</u>		
Beaked panicgrass	Panicum anceps	525000	0.128	1.54	WM, W		
Dark green bulrush	Scirpus atrovirens	7360000	0.01	1.69	W		
Fox sedge	Carex vulpinoidea	1297000	0.016	0.48	WM,W		
Virginia wildrye (cool season)	Elymus virginicus	75000	0.751	1.29	WM,W		
				Forbs Per			
Forbs:		(Lbs. or Oz.)		Per			
<u>Common Name</u>	<u>Scientific Name</u>	<u>Seeds/Oz</u>	<u>Lbs.</u>	<u>Oz.</u>	<u>Sq. Ft.</u>	<u>Bloom Period</u>	<u>Moisture Regime</u>
Aster, Smooth blue	Symphotrichum laeve	50000	0.017		0.31	L	DM,M,WM
Black-eyed Susan	Rudbeckia hirta	93750	0.063		2.17		D,DM,M,WM
Blue vervain	Verbena hastata	93000	0.027		0.92		M,WM,W
Brown-eyed Susan	Rudbeckia triloba	35000	0.063		0.81		DM,M,WM
Golden alexanders	Zizia aurea	12000	0.067		0.30	E-M	M,WM
Ox-Eye or False sunflower	Heliopsis helianthoides	6500	0.35		0.84		DM,M,WM
Purple coneflower	Echinacea purpurea	6600	0.75		1.82	M-L	DM,M,WM
Seedbox	Ludwigia alternifolia	1300000	0.01		4.78	M-L	M,WM,W
Sneezeweed	Helenium autumnale	140000	0.043		2.21	L	WM,W

## QUGA DELUXE MIX 5B Continued

Spiderwort	Tradescantia ohiensis	8000	0.103		0.30	E-M	D,DM,M
Tick-trefoil, showy	Desmodium canadense	5500	0.147		0.30	M-L	DM,M,WM
Wild Lupine	Lupinus perennis	1400	0.25		0.13	E-M	D,DM,M
Wild Senna	Senna hebecarpa	1400	0.25		0.13	M-L	DM,M,WM
<b><u>Pollinator Blooming Period</u></b>		<b>Moisture Regime</b>		<b>Soil Drainage Class</b>			
<b>E</b> =Early Bloom Period- <i>April through Mid June</i>		D=Dry		excessively drained			
<b>M</b> =Mid Bloom Period- <i>Mid June through July</i>		DM=Dry Mesic		moderately well drained			
<b>L</b> =Late Bloom Period- <i>August through October</i>		M=Mesic		well drained			
<b>E-M</b> =Species bloom period overlaps early and mid		WM=Wet Mesic		somewhat poorly drained,			
<b>M-L</b> =Species bloom period overlaps mid and late		W=Wet		very poorly drained, poorly drained			



**QUGA DELUXE MIX 5C**

**Calculations To Determine if a Seed Mix Meets 327-Conservation Cover Standard**

	Seed Mix	327 Minimum Requirements Seeds/ft <sup>2</sup>			
		Native Grass and Forb Seedings		Pollinator Seedings	
		slopes less than 5%	slopes 5% or greater	slopes less than 5%	slopes 5% or greater
	<b>Totals</b>				
<b>Total Grasses</b>	<b>10.00</b>	<b>10</b>	<b>20</b>	<b>5</b>	<b>10</b>
<b>Total Forbs &amp; Legumes</b>	<b>30.01</b>	<b>5</b>	<b>5</b>	<b>15</b>	<b>30</b>
<b>Total Grasses, Forbs/Legumes</b>	<b>40.02</b>	<b>20</b>	<b>30</b>	<b>20</b>	<b>40</b>

**Native Plant Species**

		Input Amount		Seeds Per			
		in Mix	Seeds Per				
<u>Common Name</u>	<u>Scientific Name</u>	<u>Seeds/lb.</u>	<u>(PLS lb/ac)</u>	<u>Sq.Ft.</u>			<u>Moisture Regime</u>
Composite Dropseed	Sporobolus compositus (S. asper)	480000	0.235	2.59			D, DM, M
Little bluestem	Schizachyrium scoparium	255000	0.94	5.50			D,DM,M
Sideoats grama	Bouteloua curtipendula	190000	0.438	1.91			D,DM
				<b>Forbs</b>			
<b>Forbs:</b>		<b>(Lbs. or Oz.)</b>		<b>Per</b>			
<u>Common Name</u>	<u>Scientific Name</u>	<u>Seeds/Oz</u>	<u>Lbs.</u>	<u>Oz.</u>	<u>Sq. Ft.</u>	<u>Bloom Period</u>	<u>Moisture Regime</u>
Aster, Smooth blue	Symphyotrichum laeve	50000	0.045		0.83	L	DM,M,WM
Black-eyed Susan	Rudbeckia hirta	93750	0.063		2.17		D,DM,M,WM
Blazingstar, Marsh	Liatriis spicata	11000	0.25		1.01	M-L	M,WM,W
Evening primrose	Oenothera biennis	86000	0.2		6.32		D,DM,M
Foxglove Beardtongue	Penstemon digitalis	130000	0.03		1.43	E-M	DM,M,WM
Golden alexanders	Zizia aurea	12000	0.07		0.31	E-M	M,WM
Goldenrod, Rigid or stiff	Solidago rigida	41000	0.055		0.83	L	D,DM,M,WM
Illinois Bundlesflower	Desmanthus illinoensis	3800	0.625		0.87		D,DM
Lance leaf coreopsis	Coreopsis lanceolata	20000	0.625		4.59		D,DM



# Monarch Habitat

## Conservation Cover (327) Dry Mesic Seeding/Planting Specification

Owner/Client	Farm/Tract No.	Field No.	Field Acres	County
			1	
Spring Seeding Dates	Dormant Seeding Dates		Plant Zone	Planned Date
Early Spring - June 15	November 1 - Freeze Up		I	

### Grasses:

Common Name	Scientific Name	PLS lb/ac	Total lbs.
Side-oats gramma	<i>Bouteloua curtipendula</i>	0.400	0.400
Canada wild rye	<i>Elymus canadensis</i>	0.200	0.200
Little bluestem	<i>Schizachyrium scoparium</i>	0.500	0.500
<b>TOTAL GRASSES</b>		<b>1.100</b>	<b>1.100</b>

### Forbs:

Common Name	Scientific Name	PLS oz/ac	Total Oz
Aster, Smooth blue	<i>Symphotrichum laeve</i>	0.500	0.500
Beardtongue, Foxglove	<i>Penstemon digitalis</i>	0.500	0.500
Bergamot, Wild	<i>Monarda fistulosa</i>	1.000	1.000
Blazing star, Rough	<i>Liatris aspera</i>	0.200	0.200
Bush clover, Round-headed	<i>Lespedeza capitata</i>	0.500	0.500
Clover, Purple Prairie	<i>Petalostemum purpureum</i>	2.000	2.000
Clover, White Prairie	<i>Petalostemum candidum</i>	2.000	2.000
Coneflower, Pale purple	<i>Echinacea pallida</i>	1.000	1.000
Coneflower, Purple	<i>Echinacea purpurea</i>	6.000	6.000
Coreopsis, Tall	<i>Coreopsis tripteris</i>	0.500	0.500
Goldenrod, showy	<i>Solidago speciosa</i>	0.200	0.200
Goldenrod, stiff	<i>Solidago rigida</i>	0.200	0.200
Joe-Pye Weed, Sweet	<i>Eutrochium purpureum</i>	1.000	1.000
Lead Plant	<i>Amorpha canescens</i>	1.000	1.000
<b>Milkweed, Butterfly</b>	<b><i>Asclepias tuberosa</i></b>	<b>3.500</b>	<b>3.500</b>
<b>Milkweed, Common</b>	<b><i>Asclepias syriaca</i></b>	<b>3.500</b>	<b>3.500</b>
Pea, Partridge	<i>Cassia fasticulata</i>	6.000	6.000
Primrose, Common evening	<i>Oenothera biennis</i>	0.750	0.750
Senna, Wild	<i>Cassia hebecarpa</i>	0.250	0.250
Spiderwort, Common	<i>Tradescantia ohimensis</i>	4.000	4.000
Sunflower, downy	<i>Helianthus mollis</i>	3.000	3.000
Susan, Black-eyed	<i>Rudbeckia hirta</i>	1.000	1.000
Tick trefoil, Showy	<i>Desmodium canadense</i>	4.000	4.000
<b>TOTAL FORBS</b>		<b>42.600</b>	<b>42.600</b>

Calculator To Formulate Seed Mixture for 327 Practice Standard-Monarch

	Seed Mix	Seed Mix	Pollinator Requirements	
			Non Erosive	Erosive
	Number of Species	#Seeds		
<b>Total Grasses</b>	3.0	5.0	≤5	≥10
<b>Total Forbs &amp; Legumes</b>	23.0	15.0	≥15	≥30
<b>Total Legumes (optional)</b>	6.0	3.0		
<b>Total Grasses, Forbs/Legum</b>	26.0	20.0	≥20	≥40

Monarch Habitat Requirements	
3% Milkweed	≥60% Monarch Forbs
3%	60%