

**NATURAL RESOURCES CONSERVATION SERVICE
CONSERVATION PRACTICE STANDARD**

CONSERVATION COVER

(Ac.)

CODE 327

DEFINITION

Establishing and maintaining permanent vegetative cover.

PURPOSE

The practice may be applied to accomplish one or more of the following:

- Reduce soil erosion and sedimentation
- Improve water quality
- Improve air quality
- Enhance wildlife habitat
- Improve soil quality
- Manage plant pests

CONDITION WHERE PRACTICE APPLIES

This practice applies on all lands needing permanent vegetative cover. This practice does not apply to plantings for forage production or to critical area plantings.

CRITERIA

General Criteria Applicable to All Purposes

Species shall be adapted to soil, ecological sites, and climatic conditions. Noxious and invasive species shall not be used.

Species planted shall be suitable for the planned purpose and site conditions.

Seeding rates and methods shall be adequate to accomplish the planned purpose. Certified or source identified seed shall be used where possible.

Planting dates, planting methods and care in handling and planting of the seed or planting stock shall ensure that planted materials have an

acceptable rate of survival. Vegetative planting material (e.g. sprigs, rhizomes, bulbs) shall be from a reliable supplier.

Site preparation shall be sufficiently adequate to eliminate weeds for establishment and growth of selected species.

Timing and use of equipment shall be appropriate for the site and soil conditions.

All nutrients shall be applied following the specifications in the *Fertilizer and Lime Requirements* section.

Additional Criteria to Reduce Soil Erosion and Sedimentation

The amount of plant biomass and cover needed to reduce wind and water erosion to the planned soil loss objective shall be determined using the current approved wind and/or water erosion prediction technology.

No-till seeding methods are preferred where erosion could be severe.

Nurse crops are required for seedlings in tilled seedbeds where severe erosion would be expected during the establishment period.

Additional Criteria for Improving Air Quality

In perennial crop systems such as orchards, vineyards, berries and nursery stock, vegetation established shall provide full ground coverage in the alleyway during mowing and harvest operations.

To sequester carbon, plant cover established will result in a positive CO₂ equivalent value when determined by the current approved carbon prediction technology.

Additional Criteria for Enhancing Wildlife Habitat

Grasses, forbs, shrubs and/or legumes shall be planted in a diverse mix to promote bio-diversity and

Conservation practice standards are reviewed periodically, and updated if needed. To obtain the current versions of standards, contact the Natural Resources Conservation Service at <http://www.il.nrcs.usda.gov/>.

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meet the needs of the targeted species of wildlife. It is recommended that diverse mixtures include species beneficial for pollinators. Specific measures to benefit pollinators can be found in Illinois Biology Technical Note Number 23, "Pollinator Biology and Habitat".

Where included in a wildlife management plan approved by an Illinois Department of Natural Resources (IDNR) or NRCS wildlife biologist, monoculture seedings are allowed for special purposes such as nesting and escape cover or herbaceous fire breaks. It is suggested that native grass monocultures be planted at a seeding rate of 30 PLS seeds per square foot.

Additional Criteria to Improve Soil Quality

Plants will be selected on the basis of producing high volumes of organic material to maintain or improve soil organic matter. The amount of biomass needed will be determined using the current soil condition index procedure.

Additional Criteria to Manage Plant Pests

In perennial crop systems such as orchards, vineyards, berries and nursery stock, permanent vegetative cover shall be established and managed according to Land Grant University Integrated Pest Management (IPM) recommendations for the target pest species.

CONSIDERATIONS

This practice may be used to promote the conservation of wildlife species in general, including threatened and endangered species.

Certified seed and planting stock that is adapted to the site should be used when available.

Mowing may be needed during the establishment period to reduce competition from broadleaf annual weeds.

On sites where annual grasses are an expected weed problem, it may be necessary to postpone nitrogen fertilizer application until the planted species are well established.

Consider rotating management and maintenance activities (e.g. mow only one-fourth or one-third of the area each year) throughout the managed area to maximize spatial and temporal diversity.

Where wildlife management is an objective, the food and cover value of the planting can be enhanced by using a habitat evaluation procedure to aid in selecting plant species and providing or managing for other habitat requirements necessary to achieve the objective.

Use native species that are appropriate for the identified resource concern and management objective. Consider trying to re-establish the native plant community for the site

Consider the long-term objectives of the land user and the needs of declining wildlife species, including threatened and endangered species in the selection of vegetative cover. The use of native plant species is encouraged for all cover situations.

Consider Conservation Cover to conserve and stabilize archeological and historic sites where applicable.

Additional conservation practices, such as grassed waterways, may be needed for complete erosion control.

Established plant communities usually benefit from periodic burning. Burning can stimulate growth of some species by reducing unwanted competition from weedy plants and excessive plant residue and therefore helps to maintain plant community diversity. (Refer to Prescribed Burning, Practice Code 338).

Individuals using herbicides to control weed competition should be cautioned as follows:

Read and follow all label directions and heed all precautions. If herbicides are handled or applied improperly, or if unused portions are not disposed of safely, they may contaminate water and soil, injure humans, domestic animals, desirable plants, and fish or other wildlife. Herbicides should not be used over or directly adjacent to ponds, lakes or streams. Users should be aware of and adhere to the provisions of local, county, state or federal laws and regulations concerning the use of agricultural chemicals.

Where wildlife management is an objective, use Biology Technical Note No IL-18 to determine how the food and cover value of the planting can be enhanced.

Native species (grasses, forbs, and/or legumes), other than the species planted, that encroach the planting that meet the intended purpose of the

practice and meet the landowner's objectives will be allowed.

PLANS AND SPECIFICATIONS

Specifications for this practice shall be prepared for each site. They shall include, but are not limited to:

- recommended species,
- seeding rates and dates,
- establishment procedures,
- other management actions needed to insure an adequate stand

Specifications shall be recorded using approved specifications sheets, job sheets, narrative statements in the conservation plan, or other acceptable documentation.

All specifications shall be consistent with Federal, State, and Local regulations.

ESTABLISHMENT OF PERMANENT VEGETATIVE COVER

Seeding Periods

Seeding dates are listed in Table 1. The dates listed in the table are based on long-term averages and may be extended by two weeks by the district conservationist. Extension of these deadlines shall be based on both favorable moisture and temperature for seed germination.

Soil Testing

Soil tests will be taken to the 7-inch depth for newly retired cropland and existing stands of permanent cover greater than five years old if no current soil test is available. Soil tests are considered current if they are 4 years old or less.

Fertilizer and Lime Requirements

The minimum soil test pH for all seedings is 5.5. Where the soil pH level is below 5.5, apply limestone at rates needed to increase soil pH to 6.2 or 3 tons/acre whichever is less. Lime application rates will be calculated according to the procedures described in the Illinois Agronomy Handbook. Application rates greater than 1 ton/acre will be incorporated with tillage.

Note: Depth that the lime will be incorporated must be known in order to calculate appropriate lime rates.

Minimum Levels for Nitrogen, Phosphorus, and Potassium for Native Grasses, Forbs, and Legumes

Fertilizer and lime are not normally recommended for plantings consisting of native grasses, forbs, and legumes. Soil tests should be taken for native plantings in order to select species adaptable to the plant nutrient status of the site.

Minimum Levels for Nitrogen, Phosphorus, and Potassium for Introduced Grasses and Legumes

The minimum soil test Phosphorus (Bray P1 or Mehlich 3) is 15 pounds per acre. For fields with soil test Phosphorus levels below 15 pounds per acre, apply 60 pounds of P_2O_5 per acre. The minimum soil test Potassium is 150 pounds per acre. For fields with soil test Potassium levels below 150 pounds per acre, apply 200 pounds of K_2O per acre.

Nitrogen is not recommended where native species are planned especially during the year of establishment. If weed control is achieved and nitrogen is still needed, apply 50-lbs. actual nitrogen per acre during active growth, after the establishment year.

Nitrogen is not recommended where legumes are included in the seed mixture. For seed mixtures that do not include legumes, apply 30 lbs./ac of actual nitrogen at planting.

Nitrogen may be omitted if either of the following apply:

- Grass seedings follow within nine months of the harvest of a legume crop or,
- Grass seedings are sown into soils with at least 2 percent organic matter.

Seed Quality

All seed shall comply with Illinois Seed and Weed Laws. Seeding rates are expressed in Pure Live Seed (PLS) pounds or ounces/acre.

$PLS = (\% \text{ germination} + \% \text{ dormant seed}) \times \% \text{ purity} / 100.$

Tests for seed quality shall apply to the seed lot being used and must have been performed within 6 months of the approximate date of seeding. Seed shall be tested for percent germination, purity, inert matter, weed seed, noxious weed seed, and dormant or hard seed if present. The seed label shall state

the variety and origin of the species in the mix if known and the seed test date.

Legume Inoculation

Introduced and native legume seed shall be inoculated by the wet method using Rhizobia strains specific to the legumes to be seeded. When more than one legume species is used, each species shall be inoculated separately. Re-inoculate seeds that have been pre-inoculated more than 60 days prior to seeding.

Companion (Nurse) Crop

Introduced Grasses and Legumes

For spring seedings, oats shall be seeded at a rate of one bushel/acre to reduce soil erosion and suppress weed competition. The oats shall be clipped prior to seed head emergence (late boot stage) to prevent further competition with the new permanent cover. For seedings planned for the late summer to early fall period, a companion crop of wheat or cereal rye will be seeded at a rate of 20 lbs./acre. An oat companion crop may be used for late summer if planted no later than 60 days prior to the first expected killing frost date. Expected first frost dates may be found in the FOTG, Section I-Climatic Data, most published soil surveys, and the Illinois Agronomy Handbook. Winter cereal crops will be mowed the following spring no later than just prior to seed head emergence (late boot stage) during the spring following seeding. Cool season, cereal companion crops shall not be allowed to form seeds.

Native Grasses, Forbs, and Legumes

Companion crops are usually not recommended for native warm season seedings. Where erosion or weed pressure is of concern, a broadcast or drilled companion crop of oats seeded at one bushel/acre may be used. Where a companion crop is used, mow by the late boot stage to prevent further competition with the new permanent cover and control weeds.

Temporary Cover

Temporary cover may be required to reduce potential weed and erosion problems where one of the following conditions exists.

- Fields with herbicide carry over.

- The planting is delayed due to unavailability of seed.
- The normal seeding period has passed.

The temporary cover shall be seeded as specified in Table 4. Seed during the normal spring or late summer seeding period or as close to these dates as practical. Temporary cover crops will be mowed as many times as necessary in order to prevent seed formation.

Seeding equipment

Drills, rotary spreaders, or airflow spreaders may be used. Drills will be equipped with metering devices designed for the seeds being sown. Chaffy seed will be seeded with drills equipped to sow bearded seed. Mix seed with a bulking material such as cracked corn or pelletized lime where rotary or airflow spreaders are used. Chaffy seed must be de-bearded where rotary or airflow equipment is used.

Seedbed preparation and seeding

Tilled Seedbeds

Seedbeds will be tilled to a depth of at least 3 inches. The seedbed shall be reasonably smooth, friable, and firm prior to seeding.

Firm tilled seedbeds with a corrugated metal roller, cultipacker, or a cultimulcher with the tines disengaged. Perform all tillage operations across the general slope of the land where possible. Grass and legume seed shall be drilled to a maximum 1/4-1/2 inch depth. Broadcast and airflow seedings are to be rolled with a corrugated metal roller, cultipacker, or a cultimulcher with the tines disengaged after planting.

No-till Seedings

Approved herbicides shall be applied to kill or suppress existing weed competition, where necessary. A drill designed for no-till planting shall be used to plant the seed to a maximum depth of 1/4-1/2 inch.

Frost Seedings

Frost seed only species approved for frost seeding as shown in Table 2 and Table 3. Frost seedings are

not recommended where residue cover on the soil surface exceeds 50 percent ground cover.

Modification of Existing Stands

The following recommendations can be applied to existing stands where a shift in species composition is desired while retaining components of the original stand. Nitrogen fertilizer is not recommended.

Tilled Seedbeds

Weaken existing vegetation in late summer or early fall with chemicals, mowing, grazing, and/or burning. Disturb the existing ground cover with a disc or power rotary tiller sufficiently to expose 50 percent bare soil. Drill seed to a depth no greater than 1/4-1/2 inch. Surface seeding methods may be used as long as the seedbed is rolled after seeding. Suppress early spring growth of existing species to allow for the establishment of the newly introduced species.

No-till Seedings

Weaken the existing vegetation in the late summer or early fall with herbicides, mowing, burning, and/or grazing. Drill grasses and legumes at a depth not to exceed 1/4-1/2 inch with a drill equipped for sod conditions. The seeding should be done within the appropriate seeding periods. Suppress early spring growth of existing species to allow for the establishment of the new seedlings.

Weed and Companion Crop Control During the Establishment Year

To ensure survival of new seedlings, weeds and companion crops shall be controlled during the establishment year. Native warm season species shall be mowed no shorter than 8 inches. Introduced cool season species shall be mowed no closer than 4 inches.

Seed Mixtures

General Seed Mixtures

Several seeding mixtures have been provided for common wildlife species. The mixtures may or may not be suitable for specific sites, other wildlife species of concern, or meet requirements of specific conservation programs. The native seed mixtures are designed to provide approximately 20-30 PLS

seeds/square foot. Information in Tables 2 and 3 are to be used to customize additional seeding mixtures as needed.

Seed Mixtures for Erosion Concerns

Introduced cool season grass and legume seed mixtures:

Seed mixtures shall consist of grass and legume components. The grass component of the seed mixture shall consist of at least 3 lbs. PLS per acre. The legume component shall consist of at least 50% by weight of the total seed mixture. In no case, shall the legumes in mixtures be sown at rates less than the minimums found in Table 2.

Native grass and forb seed mixtures:

Seed rates shall provide at total of 30-40 PLS seeds per square foot. A minimum of 20 PLS seeds per square foot shall be comprised of grasses and 2 PLS seeds per square foot of nitrogen fixing legume species. Seed mixtures may be developed from Table 3.

Seed Mixtures for Wildlife Concerns

Introduced Grass and Legume Seed Mixtures:

Seed mixtures shall contain at least two grass and one legume species. The grass component of seed mixtures shall be at least 2 lbs. PLS per acre. Seed mixtures may be designed using Table 2.

Native grass and forb seed mixtures:

For seed mixtures consisting of native grasses and forbs/legumes, the grass component generally should provide at least 10-20 PLS seeds per square foot. A minimum of 5 PLS seeds per square foot for the legume/forb with at least 1 PLS seed per square foot shall be nitrogen fixing legume species. Seed mixtures may be designed using Table 3.

Monoculture plantings are allowed for special purposes such as nesting or escape cover if included in a wildlife management plan approved by an IDNR or NRCS wildlife biologist.

OPERATION AND MAINTENANCE

After the establishment period, spot mowing or spot herbicide treatment shall be used, where possible, to

control noxious weeds and other undesirable plant growth.

Any mowing after the establishment period (except for noxious weed control) should be done prior to April 15 or after August 1 to protect nesting wildlife. Exceptions can be made to allow mowing, burning, and/or chemical treatments when necessary to maintain the health and diversity of the plant community.

Maintenance levels of plant nutrients may be necessary where plant vigor declines.

Burning native plant stands may be appropriate when plant vigor declines, diversity diminishes, or where invader species encroach. See Prescribed Burning, Practice Code 338 for additional information and criteria.

Where the conservation cover is grazed or hayed, refer to Prescribed Grazing, Practice Code 528 and Forest Harvest Management, Practice Code 511.

Strip disking can be used to control stand succession and maintain wildlife benefits. See Early Successional Habitat Development/Management (Practice Code 647) standards and specifications for specific guidelines.

The procedure in Illinois Agronomy Technical Note (IL-2) shall be used for stand evaluation.

REFERENCES

Heath, M.E., D.S. Metcalfe, R.F. Barnes. 1973. Forages-The Science of Grassland Agriculture, 3rd ed., Iowa State University Press, Ames.

Illinois Native Plant Guide for Streams and Stormwater Facilities in Northeast Illinois. 1997. Revised 2004.

Illinois Plant Information Network (ILPIN), <http://www.fs.fed.us/ne/delaware/ilpin/ilpin.html>

McClain, W.E. 1997. Prairie Establishment and Landscaping, Technical Publication No. 2. Division of Natural Heritage, Illinois Department of Natural Resources, Springfield, Illinois.

National Range and Pasture Handbook, USDA, Natural Resources Conservation Service, Grazing Lands Technology Institute, 1997.

Prairie Moon Nursery, [Prairie Moon Nursery - Native Prairie Seeds](#)

USDA, NRCS. 2008. The PLANTS Database (<http://plants.usda.gov>, 25 July 2008). National Plant Data Center, Baton Rouge, LA 70874-4490 USA.

Table 1. Seeding Dates

Time of Seeding	Plant Suitability Zone ¹	Cool Season Species	Warm Season Species ²
Spring	I	Early spring - June 1	Early spring - June 15
	II	Early Spring - May 15	Early spring - June 5
	III	Early Spring - May 15	Early spring - June 1
Late Summer	I	August 1 - September 1	Not Recommended
	II	August 1 - September 10	Not Recommended
	III	August 1 - September 20	Not Recommended
Dormant	I	November 1 - Freeze-up	November 1 - Freeze-up
	II	November 15 - Freeze up	November 15 - Freeze up
	III	November 15 - Freeze up	November 15 - Freeze up
Frost ³	I	February 1 - March 15	February 1- March 15
	II	February 1 - March 1	February 1 -March 1
	III	February 1 - March 1	February 1 -March 1
<p>1 - Refer to the "Plant Suitability Zones" map locate in Section I, IL-FOTG-Climatic Data</p> <p>2 - Dates to be used when warm and cool season natives are planted in mixture.</p> <p>3 - Refer to table 2 and 3 for applicable plant species.</p>			

Table 2. Introduced grasses and legumes

Species S=Sod Forming B= Bunch Forming	Wildlife	Seeds per pound	Seeds per square foot at 1 Lb. PLS/Acre	Recommended seeding rate when included in mixtures Lbs. PLS/Acre	Wildlife Suitability ³	Site Suitability ⁴	pH Range
	% of mixture by weight						
Smooth Bromegrass(S)	0-60	136,000	3	1-3	P	D,WD	5.6-8.4
Kentucky Bluegrass(S)	0-60	2,177,000	50	¼ - 1 ¼	Q	WD,PD	5.6-7.3
Orchardgrass(B)	0-50	654,000	15	½ - 1 ½	P,Q	D,WD	5.6-8.4
Timothy(B)	0-50	1,230,000	28	½ - 1 ½	P,Q	WD,PD	5.1-8.4
Red top(S)	0-50	4,990,000	114	¼ - ¾	P,Q	WD,PD	4.5-9.0
Perennial Ryegrass(B)	0-25	227,000	5	1-3	P	WD,PD	5.1-8.4
Alfalfa ¹	0-50	200,000	5	4-6	P, PN	D,WD	6.1-8.4
Red Clover ¹	0-50	275,000	6	4-6	P,Q	D,WD	5.1-8.4
Birdsfoot Trefoil ¹	0-50	375,000	9	3-4	P,Q	D,WD,PD	5.1-8.4
Ladino Clover ¹	0-50	800,000	37	½ - 1	P,Q, PN	WD,PD	5.1-8.4
Alsike Clover ¹	0-50	700,000	18	2-3	P,Q,PN	WD,PD	5.1-7.3
Annual Lespedeza ^{1,2}	0-50	225,000	5	5-6	Q	D,WD	5.1-7.3 (Common)

1. Species suitable for frost seeding. Increase seeding rate by a factor of 1.5.

2. Annual lespedezas are adapted to Plant Suitability Zones 2 and 3 only. Common Korean and Summit are recommended varieties of Korean lespedeza. Kobe and Marion are recommended varieties of striate lespedeza.

3. P=Beneficial for Pheasants Q=Beneficial for Bobwhite Quail (See Figure 1) PN=Beneficial for Pollinators

4. D=Droughty, WD=Well Drained, PD=Poorly Drained

A calculator is available at <http://efotg.nrcs.usda.gov/treemenuFS.aspx> to assist planners in developing seed mixtures.

FIGURE 1. STATEWIDE DISTRIBUTION OF RINGNECK PHEASANT AND BOBWHITE QUAIL

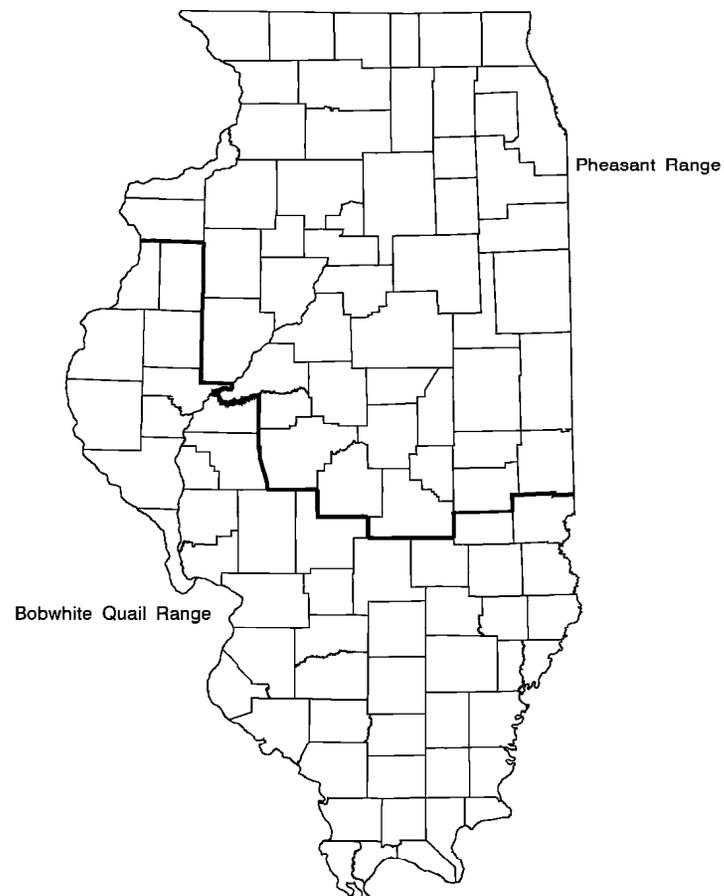


Table 3. Native grasses, sedges, and rushes

Grass, Sedge, and Rush Species	Native Ecosystem ¹	Moisture Regime ²	Seeds per square foot at 1 pound or (1 ounce) PLS/Acre	PLS seeds per pound	pH Range	Remarks
Big Bluestem, <i>Andropogon gerardii</i>	P,S	D,DM,M,WM	3	130,000	5.1-8.4	Warm Season
Blue Grama, <i>Bouteloua gracilis</i>	P	D	16	710,000	6.6-8.4	Warm Season, Sandy soils
Bull sedge, <i>Carex lanuginosa</i>	P,W,S	W	(9)	6,486,000		
Canada wildrye, <i>Elymus canadensis</i>	P,S	DM,M,WM	3	115,000	5-8	Cool season
Dark green bullrush, <i>Scirpus atrovirens</i>	P	W	(11)	7,360,000	4-8	
Eastern gamagrass ⁴ , <i>Tripsacum dactyloides</i>	P	M,WM,W	0.2 ⁴	7,500	4.5-9.0	Warm Season
Fox Sedge, <i>Carex vulpinoidea</i>	P,W,S	W	30	1,297,000	6.8-8.9	
Hard-stemmed bullrush, <i>Scirpus acutus</i>	P	W	5	206,400	5.2-8.5	
Hop sedge, <i>Carex lupulina</i>	P	W	12	528,000	6.1-7.0	
Indiangrass, <i>Sorghastrum nutans</i>	P	D,DM,M,WM	4	170,000	5.6-7.3	Warm Season
June grass, <i>Koeleria macrantha</i>	P	D,DM,M	34	1,465,000	6-8	Cool season, Sandy soils, beneficial to pollinators
Little bluestem, <i>Schizachyrium scoparium</i>	P,S	D,DM,M	5	225,000	5.1-8.4	Warm Season, beneficial to pollinators

Grass, Sedge, and Rush Species	Native Ecosystem ¹	Moisture Regime ²	Seeds per square foot at 1 pound or (1 ounce) PLS/Acre	PLS seeds per pound	pH Range	Remarks
Prairie dropseed, <i>Sporobolus heterolepis</i> ³	P	D,DM,M	28	1,200,000	6-7.2	Warm Season, Highly beneficial to pollinators
Rough dropseed, <i>Sporobolus asper</i> ³	P	D,DM,M,WM	34	1,500,000		Warm Season
Sand dropseed, <i>Sporobolus cryptandrus</i> ³	P	D,DM	114	5,000,000	6.6-8.0	Warm Season
Sand Lovegrass, <i>Eragrostis trichodes</i>	P,S	D, DM	35.6	1,550,000	6.0-8.5	Warm Season, Sandy soils
Sideoats grama, <i>Bouteloua curtipendula</i>	P,S	D,DM	4.3	190,000	5.5-7.8	Warm Season, Highly beneficial to pollinators
Soft stemmed bullrush, <i>Scirpus validus</i>	P	W	11	496,000	5.4-7.5	
Switchgrass, <i>Panicum virgatum</i> ³	P,S	D,DM,M,WM	9	400,000	5.1-8.4	Warm Season
Virginia wildrye, <i>Elymus virginicus</i>	P,S,W	WM,W	2	75,000	5-7	Cool season
Prairie cordgrass, <i>Spartina pectinata</i>	P	M,WM,W	Plugs or rhizomes on 3 foot centers		6.0-8.5	Warm Season, Seedings are unreliable
Bluejoint reedgrass, <i>Calamagrostis canadensis</i>	P	WM,W	Plugs or rhizomes on 0.5-1.5 foot centers	3,750,000	4.5-8.0	Cool season, Seedings are unreliable

Grass, Sedge, and Rush Species	Native Ecosystem ¹	Moisture Regime ²	Seeds per square foot at 1 pound or (1 ounce) PLS/Acre	PLS seeds per pound	pH Range	Remarks
Wool grass, <i>Scirpus cyperinus</i>	P, W	WM,W	(39.0)	27,200,000	3.7-8.4	Highly beneficial to pollinators
1. Native Ecosystem: P=Prairie, S=Savanna, W= Woodland 2. Moisture Regime: D=Dry, DM=Dry Mesic, M=Mesic, WM=Wet Mesic, W=Wet 3. Suitable for frost seeding. 4. For purposes of designing seeding mixtures, consider 1 lb./acre to provide the equivalent of 2 seeds/ft ²						

Table 3a. Native Forbs

Forbs and Legumes	Native Ecosystem	Moisture Regime	Flowering Period	Seeds per ft ² at 1 PLS ounce/acre	Seeds per Ounce ¹	pH Range	Remarks
Alumroot, <i>Heuchera richardsonii</i>	P	D, DM, M	April-June	16	687,500		Expensive
American germander, <i>Teucrium canadense</i>	P, S, W	M, WM	Summer	0.5	21,875	4.5-8.0	Aggressive
Angelica, Great <i>Angelica atropurpurea</i>	P,W	WM,M	May-June	0.12	5,400	7-8	
Aromatic aster, <i>Symphyotrichum oblongifolius</i>	P	D, DM, M	Late Summer	1.1	51,000	7.0-8.0	Expensive
Ashy sunflower, <i>Helianthus mollis</i>	P	D, DM,M	Aug.-Sept.	0.16	7,000		Aggressive seed no more than 5-10 ounces/acre
Aster, False <i>Boltonia asteroides</i>	P	W, WM	Aug.-Oct.	3.7	160,000		

Forbs and Legumes	Native Ecosystem	Moisture Regime	Flowering Period	Seeds per ft ² at 1 PLS ounce/acre	Seeds per Ounce ¹	pH Range	Remarks
Aster, Panicked <i>Symphotrichum lanceolatum</i>	P,W	WM, M	July-Oct.	1.0	190,000		
Bird's foot violet, <i>Viola pedata</i>	P	D, DM	April-June	0.6	26,000		Expensive
Black-eyed susan, <i>Rudbeckia hirta</i>	P, S	D, DM, M, WM	July-Sept	2.0	93,750	6.0-7.0	Biennial, Seed no more than 1 oz./ac., easily established
Blazingstar, Marsh <i>Liatris spicata</i>	P	W, WM, M	July-Sept.	0.25	11,000		Highly beneficial to pollinators
Blue-eyed grass, <i>Sisyrinchium campestre</i>	P, S	D, DM, M	Mid Spring- Early Summer	1.0	45,000		Expensive
Blue flag, <i>Iris shrevei</i>	P, S	W	May - July	0.02	1,000		Fall plant
Blue Lobelia, <i>Lobelia siphilitica</i>	P, S	WM,W	Late Sum- Early Fall	9.2	400,000		Highly beneficial to pollinators
Blue vervain, <i>Verbena hastata</i>	P	W	Summer- Fall	2.0	93,000		
Boneset, <i>Eupatorium perfoliatum</i>	P	W, WM	Mid Summer – Fall	3.6	160,000		Highly beneficial to pollinators
Boneset, False, <i>Brikellia eupatorioides</i>	P	DM,D	Aug.-Sept.	0.73	32,000		
Bottle Gentian, <i>Gentiana andrewsii</i>	P, S	M	Late Summer- Fall	13.0	562,500	5.8-7.2	Expensive, Highly beneficial to pollinators
Brown-eyed susan, <i>Rudbeckia triloba</i>	P, S	DM,M,W	Jul.-Sept.	0.8	35,000		

Forbs and Legumes	Native Ecosystem	Moisture Regime	Flowering Period	Seeds per ft ² at 1 PLS ounce/acre	Seeds per Ounce ¹	pH Range	Remarks
Bunchflower, <i>Melanthium virginicum</i>	P	WM, W	June-July	0.20	9,000		Highly beneficial to pollinators
Butterfly milkweed, <i>Asclepias tuberosa</i>	P, S	DM, M	June-Aug	0.1	4,375	4.8-6.8	Highly beneficial to pollinators
Calico aster, <i>Symphyotrichum lateriflorum</i>	S, W	W, WM	Late Summer	5.7	250,000		Expensive
Canada anemone, <i>Anemone canadensis</i>	P, S	W	Late May-June	0.18	8,000		
Cardinal flower, <i>Lobelia cardinalis</i>	P, S	WM, W	August	6.8	300,000	5.8-7.8	Expensive, Highly beneficial to pollinators
Compass plant, <i>Silphium laciniatum</i>	P	DM, M	June-Sept	0.01	663		Highly beneficial to pollinators
Cream wild indigo, <i>Baptisia leucophaea</i>	P, S	DM, M	May	.03	1,400		Highly beneficial to pollinators
Culver's root, <i>Veronicastrum virginicum</i>	P, S	M, WM, W	Summer	17.2	750,000		Expensive, Highly beneficial to pollinators
Cup plant, <i>Silphium perfoliatum</i>	P, S	M, WM, W	Jul-Sept	0.03	1,400		Highly beneficial to pollinators
Dotted blazing star, <i>Liatriis punctata</i>	P	D, DM, M	Aug.-Sept	0.09	3940	6.0-7.8	
Downy gentian, <i>Gentiana puberulenta</i>	P, S	M, WM	Sept-Oct	10.0	435,000		Expensive

Forbs and Legumes	Native Ecosystem	Moisture Regime	Flowering Period	Seeds per ft ² at 1 PLS ounce/acre	Seeds per Ounce ¹	pH Range	Remarks
Evening primrose, <i>Oenothera biennis</i>	P, S	D, DM, M	Aug-Sept	2.0	86,000	5.0-7.0	Biennial
Feverfew-Wild quinine, <i>Parthenium integrifolium</i>	P	DM,M, WM	June-August	0.16	7,000		Easily established
Flat-topped aster, <i>Doellingeria umbellata</i>	P, S	W	Late Sum-Fall	1.15	50,250		Expensive
Flowering spurge, <i>Euphorbia corollata</i>	P	D, DM, M	June-September	0.18	8,000		Expensive
Foxglove beardtongue, <i>Penstemon digitalis</i>	P, S	M	Late Spring-Mid Summer	2.8	125,000	5.5-7	Highly beneficial to pollinators
Fringed gentian, <i>Gentianopsis crinita</i>	P	WM, W	Sept-Oct	5.3	231,250		Biennial
Fringed Loosestrife, <i>Lysimachia ciliata</i>	P, W	WM, W	Late Spr-Sum	2.0	90,000		
Goats Rue, <i>Tephrosia virginiana</i>	P,S	D, DM	June-July	.05	2,500	4-6	Legume, sandy soils
Golden alexanders, <i>Zizia aurea</i>	P, S, W	M, MW	Apr.-June	0.28	12,000		Easily established
Gray-headed coneflower, <i>Ratibida pinnata</i>	P, S	D, DM, M, WM	July-Sept	0.9	39,063	5.5-6.8	Easily established
Great blue lobelia, <i>Lobelia siphilitica</i>	P, S	W, WM	Mid Sum-Fall	10.5	457,500		
Gray-headed coneflower, <i>Ratibida pinnata</i>	P, S	D, DM, M, WM	July-Sept	0.9	39,063	5.5-6.8	Easily established

Forbs and Legumes	Native Ecosystem	Moisture Regime	Flowering Period	Seeds per ft ² at 1 PLS ounce/acre	Seeds per Ounce ¹	pH Range	Remarks
Heartleaf golden alexanders, <i>Zizia aptera</i>	P, S	M	Mid Spring- Early Summer	0.02	750		
Heath aster, <i>Symphotrichum ericoides</i>	P, S	D, DM, M	Aug-Oct	4.6	200,000		Seed no more than 0.1 ounce/acre, expensive
Hoary puccoon, <i>Lithospermum canescens</i>	P	D, DM	May	0.57	25,000		
Hoary vervain, <i>Verbena stricta</i>	P	D, DM	Late Spr- Early Fall	0.77	33,375		Easily established
Illinois bundle flower, <i>Desmanthus illinoensis</i>	P, S, W	DM, M	Early Summer	0.09	3,750	5.0-8.0	Legume, easily established
Illinois tick trefoil, <i>Desmodium illinoense</i>	P, S, W	D, DM	June-July	0.09	4,000		
Ironweed, <i>Vernonia fasciculata</i>	P, S	W	Late July- Early Oct	0.55	24,000		Easily established, Highly beneficial to pollinators
Ironweed, Missouri, <i>Veronia missurica</i>	P	WM,M,D M	July-Oct.	0.53	22,000		
Joe-pye weed, <i>Eupatorium maculatum</i>	P	W	Late Spr- Early Fall	2.1	95,000		
Lance leaf coreopsis, <i>Coreopsis lanceolata</i>	P, S	D, DM	May-June	0.46	20,000		
Leadplant, <i>Amorpha canescens</i>	P, S	D,DM,M	June-Aug.	0.4	17,000		Legume, sandy soils
Loosestrife, Winged <i>Lythrum alatum</i>	P, W	W, WM	June-Sept.	68.9	3,000,000		Highly beneficial to pollinators

Forbs and Legumes	Native Ecosystem	Moisture Regime	Flowering Period	Seeds per ft ² at 1 PLS ounce/acre	Seeds per Ounce ¹	pH Range	Remarks
Lousewort, <i>Pedicularis canadensis</i> (Wood betony)	P, S	DM	May-June	0.75	3,250	4.0-7.0	
Marigold, Marsh, <i>Caltha palustris</i>	P, W	W, WM	April-June	0.60	26,000		Highly beneficial to pollinators
Milk vetch, <i>Astragalus canadensis</i>	P	M	Summer	0.36	15,625	6.0-8.0	Legume, easily established
Milkweed, Tall Green, <i>Asclepias hirtella</i>	P	D	June-Aug	0.10	4300		
Milkweed Whorled, <i>Asclepias verticillata</i>	P,S	D	May-Sept.	0.25	11,000		Highly beneficial to pollinators
Mountain mint, <i>Pycnanthemum virginianum</i>	P, S	DM, M, WM	Mid Sum- Early Fall	5.0	220,000		Highly beneficial to pollinators,
New England aster, <i>Symphotrichum novae-angliae</i>	P, S	M, WM	Aug-Oct	1.5	66,000		Highly beneficial to pollinators
Obedient Plant, <i>Physostegia virginiana</i>	P, W	W,WM,M	Aug.-Sept.	0.25	11,000		Highly beneficial to pollinators
Old field (Gray) goldenrod, <i>Solidago nemoralis</i>	P, S	D, DM, M	Late Sum- Fall	6.9	300,000	6.5-7.5	Expensive
Ox-eye or False sunflower, <i>Heliopsis helianthoides</i>	P, S	M	June-Sept	0.15	6494		Easily established
Pagoda Plant, Ohio Horse Mint, Downy Wood Mint, <i>Blephilia ciliata</i>	P	M, DM, D	May- August	9.2	400,000		Highly beneficial to pollinators

Forbs and Legumes	Native Ecosystem	Moisture Regime	Flowering Period	Seeds per ft ² at 1 PLS ounce/acre	Seeds per Ounce ¹	pH Range	Remarks
Pale beardtongue, <i>Penstemon pallidus</i>	P, S	D	May	4.1	180,000		Highly beneficial to pollinators
Pale gentian, <i>Gentiana alba</i>	P	M, WM	Sept-Oct	5.2	227,000		Expensive
Pale purple coneflower, <i>Echinacea pallida</i>	P	M	Mid-Late Spring	0.15	6,625	6.5-7.2	Easily established, Highly beneficial to pollinators
Pale Spike Lobelia, <i>Lobelia spicata</i>	P, S	D, DM, M	July-Aug.	20.7	900,000		Highly beneficial to pollinators
Partridge pea, <i>Chamaecrista fasciculata</i>	P, S	D, DM, M	July-Sept	0.07	3,125	6.5-7.5	Annual legume, sandy soils
Pasque flower, <i>Pulsatilla patens</i>	P	D, DM	Early-Mid Spring	0.41	18,000		Northern IL, expensive
Prairie blazing star, <i>Liatris pycnostachya</i>	P	DM, M, WM	Mid Sum- Early Fall	0.17	7,500	6-8.5	Easily established, Highly beneficial to pollinators
Prairie cinquefoil (potentilla), <i>Potentilla arguta</i>	P, S	D, DM, M	Spr-Sum	5.3	230,000	6-8	Easily established
Prairie coreopsis, <i>Coreopsis palmata</i>	P, S	D, DM, M	June	0.23	10,000		
Prairie dock, <i>Silphium terebinthinaceum</i>	P	M, WM	Summer	0.02	1,000		
Prairie phlox, <i>Phlox pilosa</i>	P, S	DM, M	Mid Spring- Mid Summer	.44	19,000		Expensive

Forbs and Legumes	Native Ecosystem	Moisture Regime	Flowering Period	Seeds per ft ² at 1 PLS ounce/acre	Seeds per Ounce ¹	pH Range	Remarks
Prairie ragwort, <i>Senecio plattensis</i>	P	D, DM, M	May-June	2.3	100,000		Supplies limited
Prairie smoke, <i>Geum triflorum</i>	P, S	D, DM	Mid-Late Summer	1.0	43,500		Northern IL, expensive
Prairie violet, <i>Viola pedatifida</i>	P	D, DM, M	Spring-Fall	0.7	28,000		Expensive
Primrose, Sand, <i>Oenothera rhombipetala</i>	P	D	June-Sept.	2.3	100,000		
Purple coneflower, <i>Echinacea purpurea</i>	P, W	M	June-July	0.14	6,000	6.5-7.2	Easily established
Purple meadow rue, <i>Thalictrum dasycarpum</i>	P	M, WM	May-June	0.25	11,000		
Purple prairie clover, <i>Dalea purpureum</i>	P	D, DM, M	July-Aug	0.40	17,188		Legume, Highly beneficial to pollinators
Rattlesnake master, <i>Eryngium yuccifolium</i>	P	DM, M, WM	June-August	0.16	7,000		Highly beneficial to pollinators
Riddell's goldenrod, <i>Solidago riddellii</i>	P	W	Late Summer	2.1	93,000		Wet/Calcareous Soils, Highly beneficial to pollinators
Rigid or Stiff goldenrod, <i>Solidago rigida</i>	P	D, DM, M, WM	Aug-Oct	1.0	41,000		Easily established, Highly beneficial to pollinators
Rosin weed, <i>Silphium integrifolium</i>	P	DM, M	July-Sept	0.03	1,400		Easily established, Highly beneficial to pollinators

Forbs and Legumes	Native Ecosystem	Moisture Regime	Flowering Period	Seeds per ft ² at 1 PLS ounce/acre	Seeds per Ounce ¹	pH Range	Remarks
Rough blazing star, <i>Liatris asper</i>	P, S	D, DM,M	Aug-Sept	0.34	16,000		Easily established
Roundhead lespedeza, <i>Lespedeza capitata</i>	P,S	D, DM, M	July-Sept	0.18	8,000	5.7-8.2	Legume, easily established, sandy soils
Saw-tooth sunflower, <i>Helianthus grosseserratus</i>	P, S	M,WM, W	July-Aug	0.90	12,500		Aggressive, Seed no more than 5-10 ounces/acre, Highly beneficial to pollinators
Seedbox, <i>Ludwigia alternifolia</i>	P	M, MW, W	June-Aug.	29.8	1,300,000	4-6	Adapted to sandy soils
Senna, Wild, <i>Cassia hebecarpa</i>	P	M,WM	July-August	0.03	1,400	4-7	Legume, Highly beneficial to
Senna, Maryland	p	M WM	July-August	0.04	1700		Legume
Shooting star, <i>Dodecatheon meadia</i>	P, S	D, DM, M	April-May	1.38	60,000	4-6	
Showy goldenrod, <i>Solidago speciosa</i>	P, S	DM, M	July-Oct	2.18	95,000		Highly beneficial to pollinators
Showy tick trefoil, <i>Desmodium canadense</i>	P, S	M, WM	July-Aug	0.13	5,500		Legume, easily established, Highly beneficial to pollinators
Silky aster, <i>Symphotrichum sericeum</i>	P, S	D, DM	Late Sum-Fall	1.29	55,625		Highly beneficial to pollinators

Forbs and Legumes	Native Ecosystem	Moisture Regime	Flowering Period	Seeds per ft ² at 1 PLS ounce/acre	Seeds per Ounce ¹	pH Range	Remarks
Sky blue aster, <i>Symphyotrichum oolentangiense</i>	P, S	D, DM, M	Late Sum-Fall	1.45	63,125		Expensive, easily established
Smooth blue aster, <i>Symphyotrichum laevis</i>	P, S	DM, M, WM	Aug-Oct	1.15	50,000		Expensive, easily established, Highly beneficial to pollinators
Sneezeweed, <i>Helenium autumnale</i>	P	WM, W	Aug-Sept	3.26	14,188		Highly beneficial to pollinators
Spiderwort, <i>Tradescantia ohiensis</i>	P, S	D, DM, M	May-June	0.18	8,000		Expensive, Highly beneficial to pollinators
Spiked lobelia, <i>Lobelia spicata</i>	P	DM, M	Mid Spring-Mid Summer	20.7	90,000		Expensive, Highly beneficial to pollinators
Spotted St. Johnswort, <i>Hypericum punctatum</i>	P, S	WM	June-Aug	13.3	580,000		
Sunflower, Showy, <i>Helianthus pauciflorus (laetiflora)</i>	P	DM,D	July-October	0.09	4,000		Highly beneficial to pollinators
Sunflower, Tall <i>Helianthus giganteus</i>	P	W, WM	July-Sept.	0.23	10,000		Aggressive, Highly beneficial to pollinators
Swamp aster, <i>Symphyotrichum puniceus</i>	P, S	W	Late Sum-Fall	1.0	43,750		
Swamp buttercup, <i>Ranunculus hispidus</i>	S, W	W, WM	April-July	0.04	1,594		Expensive

Forbs and Legumes	Native Ecosystem	Moisture Regime	Flowering Period	Seeds per ft ² at 1 PLS ounce/acre	Seeds per Ounce ¹	pH Range	Remarks
Swamp milkweed, <i>Asclepias incarnata</i>	P	W	Summer	0.10	4,375		Easily established, Highly beneficial to pollinators
Sweet black-eyed susan, <i>Rudbeckia subtomentosa</i>	P, S	M	Summer	1.0	43,000		
Tall tickseed or Tall Coreopsis, <i>Coreopsis trinteris</i>	P, S, W	M, MW	Summer	0.32	14,000		Aggressive seeder
Thimbleweed, <i>Anemone cylindrica</i>	P, S	D, DM, M	Late Spring-Mid Summer	0.60	26,000		Expensive
Turtlehead, <i>Chelone glabra</i>	P, W	W, WM	July-Sept.	2.1	92,000		Highly beneficial to pollinators
White heath aster or Frost aster, <i>Aster pilosus</i>	P, S, W	D, DM, M	Sept-Oct	3.2	140,000		Seed no more than 1 ounce/acre
White prairie clover, <i>Dalea candida</i>	P	DM, M	Late Spring Summer	0.44	19,000		Legume, easily established, Highly beneficial to pollinators
White sage, <i>Artemisia ludoviciana</i>	P, S	D, DM, M	Aug-Oct	5.4	234,375		Aggressive, expensive
White wild indigo, <i>Baptisia leucantha</i>	P, S	DM, M, W M	June-July	0.04	1,700		Highly beneficial to pollinators
Whorled milkweed, <i>Asclepias verticillata</i>	P	D, DM, M	Jun-Aug	0.25	11,000		Expensive, Highly beneficial to pollinators
Wild bergamont or Bee balm, <i>Monarda fistulosa</i>	P, S	D, DM, M	Mid Spring-Early sum	1.72	75,000	6-8	Expensive, easily established, Highly beneficial to

Forbs and Legumes	Native Ecosystem	Moisture Regime	Flowering Period	Seeds per ft ² at 1 PLS ounce/acre	Seeds per Ounce ¹	pH Range	Remarks
							pollinators
Wild blue larkspur, <i>Delphinium carolinianum</i>	S, W	D, DM, M	June	1.34	60,000		Expensive
Wild geranium, <i>Geranium maculatum</i>	P,S	DM,M	April-June	0.11	5000		Highly beneficial to pollinators
Wild lupine, <i>Lupinus perennis</i>	P,S	D,DM,M	May-June	.03	1400		Highly beneficial to pollinators
Yellow stargrass, <i>Hypoxis hirsuta</i>	P, S	M, WM	May-June	1.84	80,000		

Table 3b. Native Woody Shrub Species

Perennial Native Woody Shrub Species	Moisture Regime	Flowering Period	Seeds per ft ² at 1 PLS ounce/acre	Seeds per ounce	pH Range	Remarks
Button bush, <i>Cephalanthus occidentalis</i>	W, WM	June	0.14	6,000	5.3-8.5	Highly beneficial to pollinators
False indigo, <i>Amorpha fruticosa</i>	DM,M,W M	June	0.07	3250	5.0-8.5	Legume, Highly beneficial to pollinators
Meadow rose, <i>Rosa blanda</i>	DM, M, WM	June	0.06	2,500		
New Jersey tea, <i>Ceanothus americanus</i>	DM, M	Late Spring-Fall	0.16	7,000	4.3-6.5	Highly beneficial to pollinators
Pasture rose, <i>Rosa carolina</i>	DM, M, WM	June – Early July	0.06	2,500	4-7	Highly beneficial to pollinators
Sunshine rose, <i>Rosa arkansana</i>	DM, M	June-July	0.06	2,500		
Redroot, <i>Ceanothus ovatus</i>	DM, M	June	0.23	10,000		

Table 4. Temporary cover crops.

COVER CROP ¹	SEEDING RATE
Fields with atrazine carryover	
Grain Sorghum (milo)	10 lbs./acre
Sorghum-Sudan hybrids (Sudex)	20 lbs./acre
Sudangrass	20 lbs./acre
Corn	2 bushels/acre
Fields where planting is delayed due to lack of suitable seed or late planting date	
Grain Sorghum (milo)	10 lbs./acre
Sorghum-Sudan hybrids (Sudex)	20 lbs./acre
Sudangrass	20 lbs./acre
Corn	2 bushels/acre
Oats	2 bushels/acre
Cereal Rye	2 bushels/acre
Wheat	2 bushels/acre
Annual Ryegrass	15 lbs./acre
1/Cover crops should be mowed no later than early boot to prevent them from setting seed.	

Wildlife Species	Introduced Species	Seed Rate Lbs. PLS/Acre	Native Species	Seed Rate Lbs. PLS/Acre
Pheasant				
Prefer cool season grass- legume mix or moderately dense warm season grass.	Mixture 1		Mixture 1	
	Smooth Brome	3	Sideoats Grama	1
	Timothy	½	Indiangrass	1
	Alfalfa	6	Little Bluestem	2
			Purple Prairieclover	1
			Illinois Bundleflower	1
	Mixture 2		Mixture 2	
	Smooth Brome	1	Little Bluestem	2
	Orchardgrass	1	Sideoats Grama	2
	Alfalfa	6	Canada Wildrye	1
			Diverse Forb Mixture(10-20 species)	1-2
	Mixture 3		Mixture 3	
	Orchardgrass	1	Little Bluestem	2
Timothy	1	Sideoats Grama	2	
Red Clover	6	Purple Prairieclover	1	
		Illinois Bundleflower	1	

Wildlife Species	Introduced Species	Seed Rate Lbs. PLS/Acre	Native Species	Seed Rate Lbs. PLS/Acre
Whitetail Deer				
Prefer moderately dense warm season grass or cool season grass-legume stands. Legumes are an important deer food and should be included in a mixture or with other species or planted in a block as a food plot	Mixture 1		Mixture 1	
	Smooth Brome	3	Big Bluestem	1
	Orchardgrass	1/2	Switchgrass	1
	Alfalfa	6	Indiangrass	1
			Purple Prairie Clover	2
	Mixture 2		Mixture 2	
	Smooth Brome	1	Big Bluestem	1
Timothy	1	Little Bluestem	2	
Alfalfa	4	Sideoats Grama	1	
Red Clover	4	Partridge Pea	1	
		Illinois Bundleflower	1	
		Purple Prairie Clover	1/2	

Wildlife Species	Introduced Species	Seed Rate Lbs. PLS/Acre	Native Species	Seed Rate Lbs. PLS/Acre
Bobwhite Quail				
Prefer stands of bunch forming grasses the form overhead canopies with open space at ground level interspersed with legumes and other annual plant species.	Mixture 1		Mixture 1	
	Redtop	3/4	Little Bluestem	2
	Timothy	1 ¼	Sideoats Grama	2
	Red Clover	6	Partridge Pea	1
			Purple Prairie Clover	1/2
			Roundhead Lespedeza	1/2
	Mixture 2 (Plant Suitability Zones 2 and 3 only)		Mixture 2	
	Redtop	3/4	Little Bluestem	2
	Orchardgrass	1 ¼	Sideoats Grama	2
	Red Clover	4	Diverse forb mix (10-20 species)	1
Annual lespedeza	5			

Wildlife Species	Introduced Species	Seed Rate Lbs. PLS/Acre	Native Species	Seed Rate Lbs. PLS/Acre
Waterfowl				
Duck species have differing preferences of vegetation height for nesting. For example, Pintails prefer short grasses, Blue Wing Teal prefer mid size grasses, while Mallards and Gadwalls prefer tall species.	Mixture 1		Mixture 1	
	Redtop	3/4	Little Bluestem	2
	Timothy	1 ¼	Sideoats Grama	2
	Red Clover		Partridge Pea	1
			Purple Prairie Clover	1/2
			Roundhead Lespedeza	1/2
Mixture 2 (Plant Suitability Zones 2 and 3 only)			Mixture 2	
Redtop	3/4	Little Bluestem	2	
Orchardgrass	1 ¼	Sideoats Grama	2	
Red Clover	4	Canada Wildrye	2	
Annual Lespedeza	5	Diverse forb mix (10-20 species)	1	
<p>The mixes above are only example mixes that target specific wildlife species. Established and managed properly the resulting plant communities will benefit the targeted and other wildlife species. The mixes may or may not conform to the specifications of specific Conservation Programs. Consult administering agency personnel for specific program requirements. Planners may elect to design other mixtures using Tables 2 and/or 3. Planners or landowners may consult with IDNR or NRCS Biologists for seed mixes that meet specific goals or desire to target other wildlife species. Forb mixtures provide more diversity and may be used as a substitute for the legumes or forbs listed above. A sample forb mixture is provided below.</p>				

Sample Forb Mixture

Forbs and Legumes	Native Ecosystem	Moisture Regime	Flowering Period	Seed Rate PLS ounce/acre	Seeds per ft ²	pH Range	Remarks
Black-eyed susan, <i>Rudbeckia hirta</i>	P, S	D, DM, M, WM	July-Sept	1.0	2.0	6.0-7.0	Biennial ,Seed no more than 1 oz./ac.
Foxglove beardedtongue, <i>Penstemon digitalis</i>	P, S	M	Late Spring-Mid Summer	1.0	2.8	5.5-7	
Illinois bundle flower, <i>Desmanthus illinoensis</i>	P, S, W	DM, M	Early Summer	2.0	0.56	5.0-8.0	Legume
Purple coneflower, <i>Echinacea purpurea</i>	P, W	M	June-July	4.0	0.14	6.5-7.2	
Purple prairie clover, <i>Dalea purpureum</i>	P	D, DM, M	July-Aug	2.0	0.80		Legume
New England aster, <i>Symphotrichum novae-angliae</i>	P, S	M, WM	Aug-Oct	1.0	1.5		
Roundhead lespedeza, <i>Lespedeza capitata</i>	P,S	D, DM, M	July-Sept	1.0	0.18	5.7-8.2	Legume
White prairie clover, <i>Dalea candida</i>	P	DM, M	Late Spring-Summer	2.0	0.88		Legume
Wild bergamont or Bee balm, <i>Monarda fistulosa</i>	P, S	D, DM, M	Mid Spring-Early sum	1.0	1.72	6-8	
Rigid or Stiff goldenrod, <i>Solidago rigida</i>	P	D, DM, M	Aug-Oct	1.0	1.0		
TOTAL				16.0	12		