

**Natural Resources Conservation Service  
Conservation Practice Standard**

**CRITICAL AREA PLANTING  
(Ac.)  
CODE 342**

**DEFINITION**

Planting vegetation such as grass, legumes, trees, shrubs, and vines on highly erodible or critically eroding areas (sheet and rill erosion rates above 2T and/or gully erosion). Does not include tree planting mainly for wood production.

**PURPOSE**

- Stabilize the soil.
- Reduce damage from sediment and runoff to downstream areas.
- Improve wildlife habitat.

**CONDITIONS WHERE PRACTICE APPLIES**

This practice should be applied on highly erodible or critically eroding areas. These areas usually cannot be stabilized by ordinary conservation treatment and management and if left untreated will cause severe erosion and sediment damage. Examples of applicable areas are dams, dikes, levees, cuts, fills, gullied areas, or excessively eroding sloping cropland fields where vegetation is difficult to establish by usual planting methods.

**CRITERIA**

**Site preparation**

Gullied, rilled, or rough sites will be smoothed and shaped to permit the use of equipment for establishment and maintenance of vegetation. Graded slopes in the treated area will not be steeper than 2:1.

**Seedbed preparation for grasses and legumes**

After smoothing and shaping, the soil will be pulverized to a minimum depth of 4 inches and harrowed to a uniformly smooth surface. Lime and fertilizer will be incorporated during seedbed preparation.

**Seedbed preparation for ground cover plants, vines, and shrubs**

On short slopes, small areas, or when mass planting at close spacings, prepare a seedbed as in "Grass and Legumes" above. To correct undesirable soil physical properties, incorporate organic soil conditions such as compost manure, peat, or rotted sawdust during seedbed preparation.

For steep slopes and larger planting areas, make only individual plant site preparation. Dig holes and prepare the site for each individual plant. Incorporate any needed organic conditioners along with suitable soil materials to correct undesirable soil physical properties.

**Fertilizer and lime**

Grasses and legumes. Apply fertilizer and lime according to the nutrient management standard and specification code 590.

Ground cover plants, vines, and shrubs. Where mass plantings are to be made, incorporate one pound of 6-8-8 fertilizer or its equivalent per 100 square feet. Where individual planting sites are to be prepared, fertilize at the rate of one ounce of 6-8-8 per plant. Mix Fertilizer with the soil below the plant roots.

**Planting**

Seeding. Plant seed on a well prepared firm seedbed. For best results, cultipack freshly prepared seedbed before and after planting. If a cultipacker cannot be used, allow rain to settle a freshly prepared seedbed before planting, then harrow before planting seed. Sow seed and cover lightly.

Conservation practice standards are reviewed periodically and updated if needed. To obtain the current version of this standard, contact the Natural Resources Conservation Service.

Solid sod. Solid sod may be applied on sites where immediate cover is required such as steep slopes, waterways, or other areas where large volumes of water are concentrated and where establishment of turf from seed is impractical. Solid sod will be alternately placed on well prepared firm seedbeds.

Ground cover, vines, and shrubs. Plant individual balled or bare-root stock during March, April, or May at spacings shown in Table 4, 5, and 6. An initial cover establishment of grasses and/or legumes using plants selected from Table 1 through 3 may be needed depending on site conditions and/or ground cover, vines, shrubs, or trees planted.

Trees. Plant loblolly pine seedlings on 6X6 spacings for early cover. Plant during January, February, or March. Refer to Tree Planting Practice Code 612. Temporary cover or mulching may be needed depending on the severity of erosion.

Mulching. All planted areas except those to be used for hay or grazing or where solid sod is applied should be mulched with acceptable mulch materials such as small grain straw or grass mulch. Where erosion hazards are very high, soil retention blankets may be used. Refer to Mulching Practice Code 484.

## **CONSIDERATIONS**

On some sites, it may be necessary to strip and stockpile topsoil. In such cases, chisel exposed compacted soil areas, apply fertilizer and lime, then spread topsoil evenly over the treated area prior to seedbed preparation.

For solid sodding, sod should be dense and well rooted. The sod should be 90 percent pure and free of weeds and weedy grasses. Do not allow the sod to dry out, freeze, or go through a heat after harvesting and prior to placement.

Transfer and place the sod within 24 hours after harvesting. Cut the sod at least two inches thick, excluding top growth, and to uniform size for convenient handling and placement.

Areas to be sodded should be watered to wet the soil two to three inches on the same day prior to placement of the sod.

The placement of sod should be across the slope starting at the bottom and working up the slope. Fit the sod closely to together to avoid open spaces. Stagger the sod strips. Do not overlap sod strips. Roll or tamp the sod after placement to insure contact of the grass roots with the soil. On slopes greater than 4:1, secure the sod to the soil surface with wooden pegs or staples. Cover the upper edge of the sodded area with a soil retention blanket for protection against water lifting and undercutting the sod. Use wire staples to anchor soil retention blankets. Immediately after anchoring, water the sod until moisture penetrates to the soil beneath. Maintain adequate moisture for at least two weeks to insure establishment of the sod.

For concentrated flow areas that have been seeded to grass, it may be necessary to use "silt fences" or "hidabales." Silt fences consist of burlap material at least 24 inches high stretched across the concentrated flow area and held in place by steel posts spaced no more than eight feet apart. The bottom of the silt fence should be buried at least two inches. Attach the burlap to the steel post in an upright position using small gauge electric fence wire. Once vegetation is well established in the concentrated flow area, the silt fence can be removed. Hidabales can be placed across the concentrated flow area to help control erosion. Hidabales consist of square bales of hay placed length-ways with the cut side up in a trench across the concentrated flow area with four (4) to six (6) inches left above the trench or soil line.

TABLE 1. Specifications for forage, hay, wildlife habitat, recreation, and protection of structural measures.

Plant Species <u>1/</u>	Seeding Rates Per Acre		Seeding Dates	Planting Depth (Inches)
	Alone	Mixture <u>2/</u>		
<u>Perennials:</u>				
Bahiagrass, Pensacola <u>3/</u>	30 lbs	20 lbs	Mar-May Sep-Oct <u>4/</u>	¼
Bermudagrass				
Common (Hulled)	8 lbs	3 lbs	Mar-May	¼
Hybrid <u>5/</u>	25,000	20,000	Mar-June	2-3
Common (Unhulled)	10 lbs	5 lbs	Sep-Oct <u>6/</u>	¼
Tall Fescuegrass <u>7/</u>	30 lbs	20 lbs	Sep-October Feb 15-Mar 15 <u>8/</u>	¼-½
<u>Lespedeza:</u>				
Sericea	30 lbs	20 lbs	Mar-April	¼
Appalow Sericea	30 lbs	20 lbs	Mar-April	¼
White Clover <u>9/</u>		3 lbs	Sep-Oct 15	¼
<u>Annuals:</u>				
<u>Clovers 9/</u>				
Arrowleaf		10 lbs	Sep-Oct 15	¼
Ball		3 lbs	Sep-Oct 15	¼
Crimson		20 lbs	Sep-Oct 15	¼
Subterranean		20 lbs	Sep-Oct 15	¼
Red Clover <u>10/</u>		5 lbs	Sep-Oct 15	¼
<u>Lespedezas 9/</u>				
Common		15 lbs	Mar-May	¼
Kobe		15 lbs	Mar-May	¼
Korean		15 lbs	Mar-May	¼
Peas, wild winter <u>9/</u>		20 lbs	Sep-Oct	¼
Vetch, hairy <u>9/</u>		20 lbs	Sep-Oct	½
Rye, Cereal <u>11/</u>	120 lbs	90 lbs	Sep-Oct	½-1
Wheat	120 lbs	90 lbs	Sep-Oct	½-1
Ryegrass	40 lbs	20 lbs	Sep-Nov	½-1
Millet, browntop	30 lbs	15 lbs	May-Jun	½-1

1/ Refer to CES information sheet 1168 for recommended varieties.

2/ Planned seed mixtures must include at least one perennial grass specie.

3/ Pensacola bahiagrass is not recommended north of Hwy. 82.

4/ Fall seeded bahiagrass will be seeded in combination with fescue, wheat, ryegrass, or cereal rye. Not recommended north of Hwy. 80. Use 30 lbs bahia seed per acre.

5/ May include coastal, alicia, or tifton. 20,000 springs = 1 bushel. 1 bushel = 1.25 cu. Ft. Clippings not recommended.

6/ Fall seedling will be in combination with fescue. Use 10 lbs unhulled seed per acre.

7/ Not recommended south of Hwy. 80.

8/ North of Hwy. 82 and any county which Hwy. 82 crosses only. For cropland practices only.

9/ Legume seed will be inoculated with proper inoculate.

10/ Should be seeded with fescue and white clover.

11/ rye may be planted alone, as a temporary cover, between Nov 15 and Dec 15.

TABLE 2. Specifications for landscape improvement (roadsides) purposes.

Plant Species	Seeding Rates Per Acre		Seeding Dates	Planting Depth (Inches)
	Alone	Mixture		
<u>Perennials: 1/</u>				
Bahiagrass, Pensacola	30 lbs	20 lbs	Mar-May Sep-Oct <u>2/</u>	¼
Bermudagrass, common				
Hulled	8 lbs	3 lbs	Mar-May	¼
Unhulled	10 lbs	5 lbs	Sep-Oct <u>2/</u>	¼
Fescue	30 lbs	20 lbs	Sep-October	¼-½
Lespedeza, sericea	30 lbs	20 lbs	Mar-April	¼-½
<u>Annuals</u>				
Clover, crimson <u>3/</u>		20 lbs	Sep-Oct 15	¼
Rye, cereal		90 lbs	Sep-October	½
Vetch, hairy <u>3/</u>		20 lbs	Sep-Oct	½
Millet, browntop		15 lbs	May-Jun	½-¾
Wheat		90 lbs	Sep-Oct	½

1/ Seeding mixtures must include a perennial species.

2/ Fall seeding will be in combination with fescue, rye, wheat, or ryegrass.

3/ Legume seed will be inoculated with recommended inoculant.

TABLE 3. Specifications for landscape improvement or recreation (turf) purposes.

Plant Species	Planting Method <u>1/</u>	Planting Rate/ 1000 Ft <sup>2</sup>	Seeding Depth (Inches)	Planting Dates	Minimum <u>2/</u> Fertilizer Rate/1000 Ft <sup>2</sup> (13-13-13)
<u>Perennial Cover</u>					
Bermudagrass Common	Seed	1 lb	¼	Mar-May	20 lbs
	Sprig	1,000	1-2	Mar-Aug	20 lbs
Hybrids	Plug	1,000	-	Mar-Aug	20 lbs
	Sprig	1,000	1-2	Mar-Aug	20 lbs
	Plug	1,000	-	Mar-Aug	20 lbs
Carpetgrass	Seed	½ lb	¼	Apr-May	20 lbs
	Plug	1,000	-	Apr-Aug	20 lbs
Centipedegrass	Seed	¼ lb	¼	Apr-May	15 lbs
	Sprig	1,000	1-2	Apr-Aug	15 lbs
Fescuegrass, Ky-31	Seed	3 lb	¼-½	Sep-Nov 15	20 lbs
St. Augustinegrass	Sprig	1,000	1-2	Apr-Aug	20 lbs
	Plug	1,000	-	Apr-Aug	20 lbs
Zoysia grass	Sprig	4,000	1-2	Apr-Aug	20 lbs
	Plug	4,000	-	Apr-Aug	20 lbs
<u>Temporary Cover <u>3/</u></u>					
Millet, browntop	Seed	1 lb	½-¾	May-Jun	20 lbs
Rye, cereal	Seed	3 lbs	½-1	Sep-Oct	20 lbs
Ryegrass, annual	Seed	1 lb	½-1	Sep-Nov	20 lbs
Wheat	Seed	3 lbs	½-1	Sep-Oct	20 lbs

1/ One square yard of solid sod yields: 1,500 bermuda or zoysia sprigs or 500-700 carpetgrass, centipedegrass or St. Augustinegrass sprigs or 324 2-inch plugs. 1,000 square feet requires 1,000 sprigs at 1-foot centers, 4,000 sprigs at 6-inch centers.

2/ Any fertilizer source may be substituted to provide minimum requirements of N-P<sub>2</sub>O<sub>5</sub>-K<sub>2</sub>O. Use 800 pounds per acre of 13-13-13 or equivalent on large areas. Apply lime at rate of 90 pounds per 1,000 square feet or 2 tons per acre.

3/ For temporary seedings only. Annual ryegrass may be overseeded on established sod at a rate of 10 pounds per 1,000 square feet.

Table 4. Ground cover plants – planting dates: November 15 – March 15.

Ground Cover Plants	Site Suitability	Light Needs	Height (In.)	Growth Rate	Spacing (In.)	Time to Form Cover (Yrs.)	Bloom Color	Remarks
Showy Jasmine ( <u>Jasminum floridum</u> )	Wide range	Sun or shade	12-24	Medium	24	2	Yellow	Forms dense cover and drought tolerant. One of best Jasmines. Requires little maintenance and does best in sun
Goldmoss ( <u>Sedum acre</u> )	Gravelly, dry acid side	Shade	4-6	Slow	6-8	1-2	Yellow	Shoots are bright gold-yellow in spring.
Leadwort ( <u>Plumbago acre</u> )	Hot, dry locations	Shade	6-12	Medium	6-8	1-2	Blue	Handy bedding plant.
Miltailor Yarrow ( <u>Achillea millefolium</u> )	Good for dry sites	Shade	24-36	Medium	10-12	1	White-pink	Good for very dry sites.
Poppymallow ( <u>Callirhoe involucrata</u> )	Thrives in dry, sunny locations	Sun	9-12	Medium	8-12	1-2	Purple	Makes attractive mass of foliage. Deep rooted plant.
Spiderwort ( <u>Tradescantia virginiana</u> )	Requires average good moist site	Shade	18-24	Rapid	8-10	1	Blue	Good for shade.

Table 5. Vines – planting dates: November 15 – March 15.

Vines	Site Suitability	Light Needs	Height (In.)	Growth Rate	Spacing (Ft.)	Time to Form Cover (Yrs.)	Remarks
Japanese Honeysuckle ( <u>Lonicera Japonica</u> )	To nearly all soil site conditions. Gravelly rough slopes. Tolerates moist acid soils.	Sun or shade	Flat on soil or will climb trees	Rapid	2-3	2	Rapid growing; may require some pruning. Makes a good dense ground cover. Will climb trees or shrubs.
Purpleleaf Wintercreeper ( <u>Euonymus fortunei coloratus</u> )	Prefers well drained sites. Will tolerate moist acid soils.	Shade or sun	Flat on soil	Rapid	1-2	2-3	Forms weed free mat, tackling at nodes. Frost turns foliage reddish purple. Covers steep slopes.
Virginia Creeper ( <u>Parthenocissus quinquefolia</u> )	Medium to well drained sites. Tolerates dry sites and rough slopes.	Sun or shade	Flat on soil	Rapid	2-3	2	A vigorous climbing vine of loose habit. Showy scarlet fall foliage. Black berries. Will climb.

Table 6. Shrubs – planting dates: November 15 – March 15.

Shrubs	Site Suitability	Light Needs	Height (In.)	Growth Rate	Spacing (Ft.)	Time to Form Cover (Yrs.)	Remarks
Pfitzer Juniper ( <u>Juniperus chinensis pfitzeriana</u> )	Prefers well drained sites.	Sun	4-6	Rapid	3-6	2	A broad, flat-topped, wide spreading shrub. Long lived and very hardy. Available in large supply.
Creeping Juniper ( <u>Juniperus horizontalis</u> )	Prefers moist slightly acid sandy soils. Tolerates dry sites.	Sun	3	Medium	3-4	2-3	A low creeping, very hardy shrub with attractive trailing branches, dark green foliage. Adapted to steep slopes.
Sargent Juniper ( <u>Juniperus chinensis sargentii</u> )	Prefers moist slightly acid sandy soils. Tolerates dry sites.	Sun	3	Medium	3-4	2-3	A low prostrate, creeping shrub with steel blue foliage. Forms dense mat. Tolerates salt spray.
Japgarden Juniper ( <u>Juniperus procumbens</u> )	Sandy and loamy sites with moist soil.	Sun	3	Rapid	3-4	2	A handsome, hardy, low spreading shrub with ascending branches. Free from diseases and insects.
Abelia ( <u>Abelia grandiflora</u> )	Adapted to most medium acid sites.	Shade or sun	Low	Medium	3	2	Hardy, broad-leaved evergreen, all purpose shrub. Grows in shade or sun.
Thorny Elaeagnus ( <u>Elaeagnus pungens</u> )	Wide range. Does well on limestone.	Sun	8-12	Medium	8-12	2-3	Seaside or city. Drought tolerant. Needs plenty of room to develop.

Table 6. Shrubs – planting dates: November 15 – March 15 (continued).

Shrubs	Site Suitability	Light Needs	Height (In.)	Growth Rate	Spacing (Ft.)	Time to Form Cover (Yrs.)	Remarks
Japanese Holly ( <u>Ilex crenata rotundifolia</u> )	Well to moderately well drained site with medium fertility.	Sun	3-4	Medium	3-4	2	Low growing shrub with small leaves and irregular growth and blue-black berries.
Shore Juniper ( <u>Juniperus conferta</u> )	Well suited to moderately well to well drained sites.	Sun	11/2-4	Medium	2-3	2	Low growing shrub that is well suited to most site conditions and provides good ground cover.
Wintercreeper ( <u>Euonymus fortunei</u> )	Well drained.	Sun or shade	2-3	Medium	3	2	Well suited to most site conditions and provides cover.

Table 7. Specifications for stabilizing structural practices with mulch/plants by month.

Month	Mulch <u>1/</u>	Plant Species	Seeding Rate/Acre	Seeding Depth	Minimum Rates N-P <sub>2</sub> O <sub>5</sub> -K <sub>2</sub> O
Dec-Feb	2 tn/ac	Lespedeza Sericea	30 lbs	¼	18-72-72
Dec-Feb	2 tn/ac	Unhulled Bermuda	10 lbs	¼	72-72-72 <u>2/</u>
Dec-Feb	2 tn/ac	Bahiagrass <u>3/</u>	30 lbs	¼	72-72-72 <u>2/</u>
Mar-May	2 tn/ac <u>4/</u>	Lespedeza Sericea	30 lbs	¼	18-72-72
Mar-May	2tn/ac <u>4/</u>	Hulled Bermuda	8 lbs	¼	72-72-72
Mar-May	2tn/ac <u>4/</u>	Bahiagrass <u>3/</u>	30 lbs	¼	72-72-72
June	Optional	Hulled Bermuda	8 lbs	¼	72-72-72
June	Optional	Bahiagrass <u>3/</u>	30 lbs	¼	72-72-72
July-Aug	2/tn/ac	Lespedeza Sericea plus Browntop Millet	30 lbs 25 lbs	¼ ½	72-72-72
Sept-Oct	Optional	Tall Fescue <u>5/</u>	30 lbs	½	72-72-72
Sept-Oct	Optional	Bahiagrass <u>6/</u> plus Ryegrass	30 lbs 40 lbs	¼ ½	72-72-72
Nov	2/tn/ac	Lespedeza Sericea plus Vetch or W.W. Peas <u>7/</u>	30 lbs 30 lbs	¼ ½	18-72-72
Nov	2tn/ac	Unhulled Bermuda plus Vetch or W.W. Peas <u>7/</u>	10 lbs 30 lbs	¼ ½	18-72-72

1/ Refer to Mulching Practice Code 484.

2/ Apply fertilizer when grass begins to green up.

3/ Not recommended north of Hwy. 82.

4/ Apply mulch only in March. Mulch for April or May is optional.

5/ Not recommended south of Hwy. 80.

6/ Not recommended north of Hwy. 80.

7/ Vetch or wild winter peas will be inoculated with the proper inoculate.

NOTE: Table 7 may be used in lieu of a soil test or nutrient budget on gullied and eroded areas that require land shaping and grading.

NOTE: Lime should be applied at the rate of 2 tons/acre before planting and mixed with the soil.

NOTE: To improve wildlife benefits, legumes can be added to the seedings using seeding rates in Table 1.

## PLANS AND SPECIFICATIONS

Specifications for establishment and operation of this practice will be prepared for each field or treatment unit according to the criteria and considerations described in this standard. Specifications will be recorded using approved specification sheets or job sheets (approved by the state agronomist) or narrative statements in the conservation plan.

## OPERATION AND MAINTENANCE

The following actions will be carried out to insure that this practice functions as intended. These actions include normal activities in the

application and use of the practice and repair and upkeep of the practice.

1. Where critical eroding areas are stabilized using forage plants which will be grazed or hayed, Prescribed Grazing Practice Code 528A and/or Forage Harvesting Management Practice Code 511 will be planned and applied.
2. Where critical eroding areas are stabilized using tree planting, shrubs, or ground cover, the sites will be protected from grazing and fire. If livestock are present, Use Exclusion Practice Code 472 will be planned and applied.