

Natural Resources Conservation Service
Conservation Practice Standard

Critical Area Planting
Code 342 (Acre)

DEFINITION

Planting vegetation such as trees, shrubs, vines, grasses, or legumes on highly erodible or critically eroding areas.

PURPOSE(S)

1. To stabilize sheet, rill, and gully erosion.
2. To minimize sedimentation on and offsite.
3. To improve wildlife habitat and visual resources.

CONDITION(S) WHERE PRACTICE APPLIES

On highly erodible or critically eroding areas. These areas usually cannot be stabilized by ordinary conservation treatment and management and if left untreated can cause severe erosion or sediment damage. Examples include: dams, dikes, levees, cuts, fills, surface mined areas, and denuded or gullied areas where vegetation is difficult to establish by usual planting methods. This also applies to small concentrated flow areas where the drainage area is five (5) acres or less; and where adequate capacity exists without earthmoving.

CRITERIA

Criteria Applicable to All Purposes:

1. For Permanent Seedings (Six Months or Longer)
 - a. **Seeding Mixtures:** For seeding mixtures and rates; seeding dates; and fertilizer and lime criteria see Tables 5 and 6 in "Appendix A – Seeding Tables, Section IV, Field Office Technical Guide (FOTG). Note: a companion crop (nurse crop) of oats, wheat, or rye can be added to the mixtures if desired. See rates in Table 6 of Appendix A.
 - b. **Seedbed Preparation:** See Table 10 in "Appendix A – Seeding Tables, Section IV, Field Office Technical Guide (FOTG).
 - c. **Methods of Seeding:** See Table 11 in "Appendix A – Seeding Tables, Section IV, Field Office Technical Guide (FOTG).
 - d. **Non-Standard Seeding Periods:** See Table 6 "footnotes" in "Appendix A – Seeding Tables, Section IV, Field Office Technical Guide (FOTG).

e. Seeding Long Slopes

- (1) When slope lengths exceed those shown in the chart below the use of straw bales or a silt fence should be considered to reduce the sheet and rill erosion potential. The actual decision to use straw bales or a silt fence will need to be made on a site by site basis considering potential on and offsite impacts.

Critical Slope Lengths for Temporary Sediment/Runoff Trap (Silt Fence or Straw Bales)		
Slope		Slope Length
0% - 2%	Flatter than 50:1	250
2% - 10%	50:1 – 10:1	125
10% - 20%	10:1 – 5:1	100
20% - 33%	5:1 – 3:1	75
33% - 50%	3:1 – 2:1	50
> 50%	> 2:1	25

- (2) Silt fences and/or straw bales should be placed on the contour. Silt fences should be installed per the manufacturer's recommendations.
- (3) Straw bales shall be placed tight end-to-end on their side on the contour. Two (30 – 36 inch) wooden stakes shall be driven through each bale and at least 12 inches into the soil.
- (4) Provisions shall be made to remove the silt fences and/or straw bales after the area to be vegetated is stabilized.

f. Ditch Bank Seedings.

- (1) The seeding shall extend from the lower water level of the ditch to at least the ridge of the spoil bank. If there is no spoil bank, or if spoils have been leveled, the minimum distance for berm seeding shall be four (4) feet from the top of the ditch.
- (2) Seed and fertilize the ditch bank within 24 hours following the clearing and shaping. On ditches with greater than four (4) foot bottoms, the NRCS technician shall determine if seedbed preparation and mulch is needed with the seeding and fertilizing.

g. Salt Contaminated Areas. Sites that do not exceed 15 mmhos/cm³ or where sodium concentration does not exceed 15% of the CEC (a soil test is required – request an electroconductivity test) can use the same fertilizer, seedbed preparation, and mulching described in paragraphs b & c above. However, one of the following salt tolerant seed mixtures shall be used.

- (1) Tall Wheatgrass @ 20 lbs/ac
- (2) Alkali Sacaton @ 4 lbs PLS/ac plus Switchgrass @ 8 lbs PLS/ac
- (3) Northern Varieties of Bermudagrass – Sprigs on 2 foot centers or 20 bu/ac.

h. Concentrated Flow Areas. Critical area planting may be used for small concentrated flow areas when all the following criteria are met:

- (1) The watershed area is five (5) acres or less.

- (2) The watercourse requires no shaping beyond that which can be done by normal tillage equipment for seedbed preparation.
 - (3) The planner is assured there is an adequate cross section for conducting runoff. This cross section will have a minimum dimensions of 20 feet wide and 0.8 feet deep.
 - (4) An area of at least 30 feet wide will be seeded.
 - (5) For seeding mixtures and rates; seeding dates; and fertilizer and lime criteria see Tables 5 and 6 in "Appendix A – Seeding Tables, Section IV, Field Office Technical Guide (FOTG).
 - (6) Seed only during March 15 to May 31; or August 1 thru September 15th.
2. Temporary Herbaceous Plantings (Less than Six Months). Temporary seeding may require fertilizer, lime, seedbed preparation, seed coverage, mulch, and irrigation for quick plant growth. Each site shall be evaluated to determine which measures will be necessary for a successful seeding. See Table 7 – Temporary Seedings of Appendix A – Seeding Tables located in Section IV, FOTG.
 3. Mulching Options. For mulching and mulch anchoring options other than hay or straw see the NRCS Mulching Standard 484.
 4. Sodding.
 - a. Sod may be used on critical areas and in concentrated flow areas in lieu of standard seeding and mulching.
 - b. The sod shall consist of strips of live, vigorous grass preferably tall fescue sod or Kentucky bluegrass sod.
 - c. Sod shall be cut with smooth clean edges and square ends to facilitate laying and fitting. The sod shall be cut in uniform thickness.
 - d. Sod shall be carefully placed and pressed together so it will be without voids. On gutter and channel sodding the sod shall be placed at right angles to the centerline of the channel.
 - (1) On steep graded channels each strip will be staked with at least two stakes not more than 18 inches apart. Stakes will be of wood and be approximately ½ " X ¾ " X 12". They will be driven flush with the top of the sod and flat against the slope.
 - (2) On slopes 3:1 or steeper, where the drainage area into the sod gutter or channel is ½ acre or larger, two inch poultry netting (or similar netting) will be staked in place on the surface of the sod. The netting and the sod will be staked with at least two stakes not more than 18 inches apart. Stakes will be of wood and be approximately ½ " X ¾ " X 12". The netting shall be stapled on the side of each stake within two (2) inches of the top of the stake. The stakes will be driven flush with the top of the sod and flat against the slope.
 - (3) The sod shall be rolled after placing and watering. Watering shall consist of a thorough soaking of the sod and bed to a depth of 4 inches. The sod shall be maintained in a moist condition by additional watering for a period of 30 days.
 5. Woody Species. Use tree or shrub species which will be able to survive on an adverse site. Trees and shrubs take two (2) to five (5) years longer to stabilize a critical area; but are generally less expensive, last longer, and will require less maintenance than grass or legumes. Grasses shall not be seeded in areas to be planted to trees or shrubs. Mulching shall be done prior to planting if required. Select trees, shrubs, spacings, and planting dates from Appendix B , Section IV, FOTG – Tree and Shrub Recommendations.

Additional Criteria to Improve Wildlife Habitat and Visual Appearance.

Select grass and legume species and/or tree and shrub species that will not only stabilize the site but also meet the needs of the planned wildlife habitat. Refer to NRCS Practice Standard Wildlife Upland Habitat Management (645) for additional criteria on species selection and spacings.

CONSIDERATIONS

1. Use diversions, desilting basins, terraces, silt fences, or other barriers to help reduce the runoff into or off the critical area.
2. Use grasses and legumes to heal actively eroding areas where prompt correction is both desirable and practical.
3. Use woody vegetation to heal eroding areas on which it may be difficult to establish and maintain grass and legume cover alone.
4. Vegetation alone cannot be expected to solve soil slippage problems.
5. Tall fescue is excellent to stabilize eroding areas. However, it is not a quality nesting habitat. Tall fescue should not be used where wildlife habitat is a priority.
6. Topsoil should be stripped and stockpiled before grading operations. After grading is completed the topsoil can be applied to the site that are otherwise not suited for vegetation.
7. Grade as much as feasible to permit the use of conventional seedbed and seeding equipment.
8. Hydro-Seeding (Hydraulic) should be used on slopes steeper than 2.5:1.
9. Irrigation should be considered on droughty sites or on any site where quick plant growth is needed.

PLANS AND SPECIFICATIONS

Plans and specifications for the planning, application, operation, and maintenance of this practice shall be developed for each site using Jobsheet 342, or narrative statements, or other plans/forms that detail the specifications that are to be applied. The minimum documentation for this practice is found on the last page of this standard.

OPERATION AND MAINTENANCE

1. Check new seedings and plantings every few days during the first month to assess the progress and apply the needed care (irrigation, reseeding, mulching, etc.).
2. Maintain established grass and legume seedings with appropriate mowing and fertilizer as needed.
3. Repair damaged areas as soon as possible after the damage occurs.
4. Remove temporary diversions, silt fences, etc. after the area is stabilized.
5. Exclude livestock and other traffic while the area is being stabilized and permanently if site conditions dictate.

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References and Additional Information:

Jobsheet 342

Appendix A – Grasses and Legume Seedings, Section IV, Ohio FOTG

Appendix B – Tree and Shrub Planting, Section IV, Ohio FOTG

Practice Documentation For:	<i>Critical Area Planting - 342</i>
The following documentation must be in the case folder or engineering subfolder.	
Practice Planning	
<ol style="list-style-type: none"> 1. Is the practice part of a conservation plan? 2. Have the purpose(s) for the practice been identified? 3. Is the location of the practice identified on a map or plan drawing? 	
Practice Design	
<p>Have the following design criteria been addressed?</p> <ol style="list-style-type: none"> 1. Species of grasses, legumes, shrubs, and trees compatible with site and soil conditions. 2. Methods and rates of planting; fertilizer and lime requirements. 3. Mulching requirements, if needed. 4. Planting site preparation; time of planting; mulching; and irrigation if needed. 	
Practice Installation / Application	
Does the practice meet the minimum criteria for the planned purpose(s)?	
Have the following criteria been documented in the assistance notes or practice jobsheet?	
<ol style="list-style-type: none"> 1. Species planted. 2. Quality of the planting. 3. Acres planted. 	
Practice Deficiencies	
If applicable, have the practice deficiencies been communicated with the decisionmaker?	
Practice Maintenance	
Have the following maintenance actions been communicated to the decisionmaker?	
<ol style="list-style-type: none"> 1. Weed and brush control. 2. Reseeding or replanting to repair damaged areas. 	
Other Comments:	