

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

CONSERVATION PRACTICE STANDARD

HEDGEROW PLANTING

(Feet)

CODE 422

DEFINITION

Establishment of dense vegetation in a linear design to achieve a natural resource conservation purpose.

PURPOSE

Providing a minimum of one of the following conservation functions:

- Habitat, including food, cover, and corridors for terrestrial wildlife.
- To enhance pollen, nectar, and nesting habitat for pollinators.
- Food, cover, and shade for aquatic organisms that live in adjacent streams or watercourses.
- To provide substrate for predaceous and beneficial invertebrates as a component of integrated pest management.
- To intercept airborne particulate matter.
- To reduce chemical drift and odor movement.
- Screens and barriers to noise and dust
- To increase carbon storage in biomass and soils.
- Living fences
- Boundary delineation and contour guidelines

CONDITIONS WHERE THIS PRACTICE APPLIES

This practice applies in openland situations where it will accomplish at least one of the purposes stated above.

CRITERIA

Criteria Applicable to All Purposes

Because each location is unique to species, habitat, topography, and climate, each hedgerow must be planned and installed to a plan and adapted for the specific site.

Methods shall be used to protect the soil resource from erosion thereby reducing the potential movement of sediment and dissolved substances.

Hedgerows shall be established using woody plants or perennial bunch grasses producing erect stems attaining average heights of at least 3 feet persisting over winter.

Competing vegetation shall be controlled until the hedgerow becomes established. Control shall continue beyond the establishment period, if necessary.

Management measures shall be provided to control invasive species and noxious weeds. No plant listed by the state as a noxious weed shall be established in a hedgerow.

The practice shall be protected from livestock grazing and trampling to the extent necessary to ensure that it will perform the intended purposes.

Hedgerows shall be designed and installed in compliance with state and federal laws including needed permits.

Additional Criteria for Wildlife Food, Cover, and Travel Corridors

Establish at least two compatible species of native vegetation. Multiple species increase food and habitat diversity while reducing pest and disease risk.

Selected plants shall provide cover and/or food to support the landowner's wildlife objectives.

Minimum hedgerow width, at maturity, shall be 18 feet, with at least 4 rows of plants for species in table 1 based on a 6 foot spacing. Minimum width, at maturity, shall be 20 feet, with at least 3 rows of plants for species in table 1 based on a 10 foot spacing.

In plantings adjacent to small streams, the plantings shall be site adapted, large enough at maturity, and installed close enough to shade the stream.

Additional Criteria for Pollinator Habitat

Hedgerow plants must provide abundant pollen and nectar resources.

Multiple species with different blooming periods (early spring through late summer) shall be included in the planting. The actual number of species is dependent upon the availability of adjacent flowering plants. Plants that bloom during the same period as adjacent insect-pollinated crops can be excluded.

Pollinator hedgerows will be protected from pesticides that may harm pollinators. If pest control is required, only non-blooming plants will be treated, and/or only pesticides non-toxic to pollinators shall be used.

Additional Criteria For Living Fences

Selected plants shall attain a size and form adequate to create a barrier to contain livestock or humans, as needed.

If the purpose is to contain livestock, selected plants shall not be poisonous or hazardous to livestock.

Additional Criteria for Unit Delineation

Hedgerows shall be aligned along boundaries of fields to differentiate land management units. Hedgerows can also be aligned along property boundaries that fall along open field edges.

Additional Criteria for Improvement of Landscape Appearance

The hedgerow design shall meet the aesthetic objectives of the landowner.

Plants shall be selected based upon the landowner's preferences for color, texture and growth habit.

Additional Criteria for Reducing Particulate Matter Movement

The hedgerow will be oriented as close to perpendicular to the prevailing wind direction as possible.

Hedgerow density on the upwind side shall be at least 50% at maturity.

Hedgerow density adjacent to the particulate source shall be at least 65% at maturity.

Additional Criteria to Reduce Odor Movement and/or Chemical Drift

Orientation of the hedgerow shall be as close to perpendicular to the prevailing wind direction during the period of concern as possible, and between the

source of the odor or chemical drift and the sensitive areas.

Hedgerows shall be located upwind of the odor producing area and the chemical application area.

Tree and shrub species used shall have foliar and structural characteristics that optimize interception, adsorption and absorption of airborne chemicals or odors. Plant species shall be selected that are tolerant of anticipated chemical use.

Additional Criteria for Visual Screens and Noise Barriers

Screening hedgerows provide privacy, hide unsightly areas from view or reduce noise.

Hedgerows shall be located where they most completely obstruct a line of sight or offensive sound.

Selected plants shall attain a height and fullness sufficient to break the line of sight or baffle sound.

Specific Criteria Applicable to Most Areas in Alabama

- I. **Planting Dates** - Plant between December 1 and March 15.
- II. **Care of Seedlings** - The seedling storage area should be well ventilated, cool and not be exposed to freezing temperatures or excess heat. Seedlings should be watered at least weekly if they are stored for an extended period.
- III. **Site preparation** - Break and harrow a strip as wide and as long as the planned hedgerow to reduce plant competition. This operation should be performed several weeks prior to planting. Alternative methods of site preparation include the use of prescribed burning, mowing, & herbicides.
- IV. **Planting Methods** - Plant by hand tools or use a suitable mechanical tree planter. Areas with a compacted soil layer or plow pan should be subsoiled or planted in a manner that would penetrate the restrictive layer. Seedlings should be planted to the root collar (usually to where they were planted to in the nursery). Soil around the seedling should be firmly packed upon completion of planting.
- V. **Maintenance** - Replant as needed. Provide protection from wildfire and damage from wild or domestic animals as needed. Maintenance applications of fertilizer and lime may be used to increase plant vigor and production.

VI. Species to Plant - See Table 1 for a list of recommended plants for hedgerows. Other plants may be used if they meet the objectives and are adapted for the site. Avoid the use of species that are known to be a pest such as privet.

TABLE 1	
RECOMMENDED SPECIES TO PLANT	
6 ft. x 6 ft. spacing	
Species	Primary Application
Chickasaw plum	Wildlife cover and food
Eastern red cedar	Screening and cover
Wax myrtle	Screening/cover
American Beautyberry	Cover and food
Hawthorne	Cover and food
10 ft. x 10 ft. spacing	
Persimmon	Wildlife food
Crab apple	Wildlife food
Dogwood	Wildlife food
Virginia pine	Screening/cover
Loblolly pine	Screening/cover
Dwarf chinquapin oak	Food

CONSIDERATIONS

General Considerations

Hedgerows provide multiple benefits. They can be planned in combination with other practices to develop complete conservation systems that enhance landscape aesthetics, reduce soil erosion, improve sediment trapping, improve water quality, and provide wildlife habitat.

In open land they increase the edge effect, which is important to many species of wildlife. They serve as a source of food and cover for game and non-game wildlife, depending upon the variety of shrubs that are planted. They serve as living fences and vegetative screens.

Livestock exclusion shall be considered when feasible. Many shrubs and trees are incompatible with certain types of livestock when initially planted.

Contact a registered forester before combining livestock and hedgerows.

Considerations for Wildlife Food, Cover, and Travel Corridors

Select a variety of plants to provide increased benefits for wildlife. A hedgerow that provides food and cover will be used by a greater diversity of game and non-game species.

Hedgerows can provide travel lanes, or corridors that allow wildlife to move safely across a landscape. They can also provide a link between fragmented habitats. Wider corridors generally accommodate more wildlife use.

Hedgerows can provide wildlife with cover for feeding, loafing, nesting, and caring for young. They can also complement the availability of naturally occurring wildlife foods.

Installation of artificial nest boxes with predator guards can encourage cavity-nesting birds and small mammals to utilize a hedgerow. Another way to provide nesting and escape cover is to plant dense or thorny shrub species that will create a thicket.

Establishment of herbaceous vegetation along the edges of a hedgerow can further enhance the habitat functions of a hedgerow.

Establishment of evergreen plants provides year-round concealment and thermal cover for wildlife.

In grassland ecosystems, hedgerows may adversely affect area-sensitive nesting birds by fragmenting habitat patches and increasing the risk of predation.

Living Fences

Thorny shrubs and trees can improve a living fence's barrier effect. Limb and twig density is also an important factor to consider when planning a living fence.

Screens and Noise Barriers

From eye-level, hedgerows reduce the line-of-sight across open areas, concealing objects behind them from view. This may be used to conceal objects that are displeasing to the eye. It may also be used to conceal game animals from the eyes of poachers along roadways or other public access areas.

Hedgerows also provide a barrier to noise. For noise barriers, hedgerows should be located as close to the source of noise as possible.

A combination of shrubs and/or trees can create more effective screens than single species plantings. Evergreens provide foliage that can maintain a screen's year-round effectiveness, although certain species of deciduous plants will also work well.

Consider the design from viewpoints on both sides of the screen.

Water Quality and Quantity

Water quality benefits may arise from:

- Arresting sediment movement and trapping sediment-attached substances.
- Infiltration and assimilation of plant nutrients.
- Water cooling effects resulting from increased shade on small watercourses.

A hedgerow will increase surface water infiltration by improving soil structure around its root zone. However, evapotranspiration may reduce groundwater recharge benefits.

Vegetative Screens Considerations

The primary purpose of the vegetative screen is to block off or to reduce the view of open areas. A combination of low and tall growing shrubs and/or trees will be more effective than a single species. Evergreens should be a major component although they can be interspersed with deciduous species.

Landscape Improvement Considerations

Hedgerows may be used around homes and gardens by selecting plants that best fit the site needs. Consider seasonal display of colors on bark, twigs, foliage, flowers, and fruit. Growth habits such as outline, height, width, and density should also be considered.

In agricultural situations, protection from grazing may be necessary, especially until seedlings become established. Hedgerows on abandoned mined land may be more difficult to establish.

Cultural Resources Considerations

Cultural resources shall be considered when planning this practice. This practice has the potential for adversely affecting cultural resources and compliance with GM 420; Part 401 during the planning process is necessary. Where appropriate, local cultural values shall be incorporated into practice design in a technically sound manner. Compliance with all applicable federal, state and local laws and regulations, including permits, permissions, or notifications is required.

PLANS AND SPECIFICATIONS

Plans and specifications shall be prepared for each site. Plans and specifications shall be recorded using approved specification sheets, job sheets, or narrative documentation in the conservation plan, or other acceptable documentation.

OPERATION AND MAINTENANCE

Supplemental planting may be required when survival is too low to produce a continuous hedgerow.

Vegetation shall be protected from unwanted fire and grazing throughout the life of the practice.

Biological control of undesirable plant species and pest (e.g., using predator or parasitic species) shall be implemented where available and feasible.

Periodic applications of nutrients may be needed to increase plant vigor and production.

Renovation activities shall be scheduled to prevent disturbance during the wildlife nesting season.

REFERENCES

National Biology Handbook, Part 614.4, "Conservation Corridor Planning at the Landscape Level". Natural Resources Conservation Service, August 1999.