

**NATURAL RESOURCES CONSERVATION SERVICE
CONSERVATION PRACTICE STANDARD AND SPECIFICATIONS**

HEDGEROW PLANTING

(feet)

Code 422

DEFINITION

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

PURPOSES

Providing at least one of the following conservation functions:

- Food, cover and corridors for terrestrial wildlife.
- Food and cover for aquatic organisms that live in watercourses with bank-full width less than 5 feet.
- To intercept airborne particulate matter.
- To reduce chemical drift and odor movement.
- To increase carbon storage in biomass and soils.
- Living fences
- Boundary delineation
- Contour guidelines
- Screens and barriers to noise and dust
- Improvement of landscape appearance

CONDITIONS WHERE PRACTICE APPLIES

This practice applies wherever it will accomplish at least one of the purposes stated above.

CRITERIA

General Criteria Applicable to All Purposes

Methods used will be designed to protect the soil resource from erosion.

Hedgerows shall be established using woody plants.

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 purpose(s).

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

All planned work shall comply with federal, state and local laws and regulations.

Management practices and activities are not to disturb cover during the primary nesting period (May 1 – July 15). Exceptions could be granted when necessary to maintain the health of a plant community. Management and maintenance activities will generally be restricted to July 16 – August 15. Mowing may be needed during the establishment period to control weeds.

Plants selected must be suited and adapted to the soils, climate and conservation purpose.

See WINDBREAK/SHELTERBELT ESTABLISHMENT (380) and TREE/SHRUB ESTABLISHMENT (612) for species selection and planting recommendations based on landowner objectives. When planting for maximum woody fruit production use the

maximum spacing for full crown development. For screening or tight thicket cover, space the plants at the minimum distance.

Planting rates will be adequate to accomplish the planned purpose.

Additional Criteria to Provide Wildlife Food and Cover

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

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

Plant three or more rows of trees and/or shrubs. Select berry or nut producing species providing fall and winter food sources. Plant a minimum of 30 feet wide.

Following is a partial listing of plants with wildlife values – American plum, American hazelnut, Blackberry, Dogwood – silky, rough leaf, gray, redosier; Shrub lespedeza, Sumac – dwarf, smooth, fragrant; Blackhaw, Deciduous holly, Viburnum, Arrowwood, American cranberrybush, Pin oak, Eastern red cedar, Northern red oak, Osage orange, Pecan, Persimmon, Bur oak, Green ash, and White oak.

Older hedgerows can be made more attractive for wildlife by interplanting open areas within hedgerows with native vine, shrub or tree species that provide food and cover for wildlife. Hedgerows dominated by trees over 12' tall can be improved for wildlife by removing the trees with chainsaws or clippers and allowing more shrub and bushy species to flourish. See WILDLIFE UPLAND HABITAT MANAGEMENT (645) for information on hedgerow renovation.

Additional Criteria for Living Fences

Selected plants shall attain a size 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 the animals.

Additional Criteria for Boundary Delineation

Hedgerows shall be aligned along boundaries of fields, or forestlands to differentiate land management units.

Additional Criteria for Contour Guidelines

Hedgerows shall be aligned so they provide permanent contour markers supporting implementation of CONTOUR FARMING (330) or STRIPCROPPING (585). Refer to those conservation practice standards for alignment criteria.

Additional Criteria for Screens and Noise Barriers

Screen plantings are linear plantings designed to provide privacy, hide unsightly areas from public view, or reduce noise.

Hedgerows shall be constructed 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.

Use conifers with low dense branches to provide benefits throughout the entire year. Multiple row designs allow the addition of plant materials that benefit wildlife and improve the general aesthetics of the area.

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

Tree and shrub species used shall have foliar and structural characteristics that optimize interception, adsorption and absorption of airborne chemicals or odors.

CONSIDERATIONS

General

Planting a hedgerow larger than the minimum length and width will increase the amount of carbon stored in the soil and biomass.

Hedgerows 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.

Hedgerows following land contours create meandering lines on the landscape, produce a natural appearance and increase the availability of "edge" wildlife habitats.

Hedgerows containing a mixture of native shrubs and small trees provide greatest environmental benefits.

Use of bareroot and containerized seedlings will accelerate hedgerow development.

Consider the amount of shading a hedgerow will provide at maturity. Shading may impact growth of adjacent plants, microclimate and aesthetics.

Limiting renovation events to one-third of a hedgerow's length or width will prevent sudden elimination of the practice's wildlife habitat function.

Periodic root pruning can reduce nutrient and water robbing from adjacent cropland.

Careful consideration should be given to endangered or threatened species and non-target wildlife species during the planning process.

Wildlife Food, Cover and Corridors

Hedgerows can provide travel lanes, or corridors that allow wildlife to move safely across a landscape.

Generally, wider corridors accommodate more wildlife use. Linking fragmented habitats or cover types with corridors may greatly increase the use of an area by wildlife. In general, the wider the corridor the more species will use it. A minimum of 30 feet is needed.

In grassland ecosystems, hedgerows may adversely affect area-sensitive nesting birds by fragmenting habitat patches and increasing the risk of predation. In these areas limiting hedgerow plantings to shrub species may be necessary.

Hedgerows can complement the availability of naturally occurring wildlife foods.

Hedgerows can provide wildlife with cover for feeding, loafing, nesting and caring for young.

Dense or thorny shrub thickets provide songbirds with important nesting sites and a refuge to escape predators.

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

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

Installation of artificial nest boxes with predator guards can encourage cavity-nesting birds and small mammals to utilize a hedgerow.

Living Fences

Thorny shrubs and trees can improve a living fence's barrier effect.

Screens and Noise Barriers

From eye-level, hedgerows reduce the line-of-sight across open areas, concealing objects behind them from view.

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

Locate noise barriers as close to the source of noise as possible.

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.

Improving Landscape Appearance

Consider plants' seasonal display of colors on bark, twigs, foliage, flowers and fruit.

Consider plants' growth habits (outline, height and width).

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.

Incidental Trapping of Snow or Soil

Although not a primary purpose, hedgerows may incidentally trap wind blown snow or soil.

Consider installing hedgerows on alignments that prevent trapping and accumulation of snow and sand on public roads.

Refer to the WINDBREAK/SHELTERBELT ESTABLISHMENT (380) standard for criteria when snow or sand trapping is a primary conservation purpose.

PLANS AND SPECIFICATIONS

Site specific plans will be developed based on principles contained in this standard.

When wildlife is a purpose, planners are encouraged to work closely with the NRCS or MDC biologist in developing site specific plans and specifications.

Plans and specifications for establishment and maintenance of this practice shall be prepared for each site. Plans and specifications shall be recorded using approved specification sheets, job sheets, and narrative statements in the conservation plan or other acceptable documents.

These documents are to specify the requirements for installing the practice, such as the kind, amount or quantity of materials to be used, or the timing or sequence of installation activities.

OPERATION AND MAINTENANCE

An operation and maintenance plan shall be developed that is consistent with the purposes of this practice; the intended life, and the criteria for its design. Actions will be carried out to ensure this practice functions as intended throughout its expected life. These actions include normal repetitive activities in the application and use

This practice will be inspected periodically and restored as needed, to maintain the stated purpose. Additional operation and maintenance requirements will be developed on a site-specific basis to assure performance of the practice as intended.

Management measures must be provided to control invasive species and noxious weeds in order to comply with state noxious weed laws.

Replacement of dead trees and shrubs will be continued until the hedgerow is meeting its intended purpose. Supplemental planting may be required when survival is too low to produce a continuous hedgerow.

Vegetation shall be maintained to ensure continued control of odor movement and chemical drift.

Vegetation shall be protected from unwanted fire and grazing throughout its life span.

Pests shall be monitored and controlled.

Periodic applications of nutrients may be needed to maintain plant vigor.

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