

NATURAL RESOURCES CONSERVATION SERVICE
CONSERVATION PRACTICE STANDARD

HEDGEROW PLANTING

(Ft.)
Code 422



DEFINITION

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

PURPOSE

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

Species used must be suitable and adapted to the soils, climate and conservation purpose.

Hedgerows shall be established using woody plants, or perennial bunch grasses producing erect stems attaining average heights of at least 3 feet which will persist throughout the winter season. Best results will be achieved where there is a mixture of trees, shrubs, and herbaceous species. See NRCS Technical Note, FL-Biology-37: "Guidelines for Hedgerows" and NRCS conservation practice standard Tree/Shrub Establishment, Code 612, for establishment guidance.

Minimum width of a hedgerow is 15 feet.

Establishment of native plants will be encouraged over introduced species. Category I invasive plant species as listed by the Florida Exotic Pest Plant Council shall not be used.

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. Impacts to cultural resources and Federal and State protected species shall be evaluated during planning, design and implementation of this conservation practice in accordance with established National and Florida NRCS policy (General Manual, Title 420-Part 401; Title 450-Part 401; Title 190-Parts 410.22 and 410.26, National

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

Planning Procedures Handbook, (FL Supplements to Parts 600.1 and 600.6), National Cultural Resources Procedures Handbook, and National Environmental Compliance Handbook .

Additional Criteria for Wildlife Food, Cover and Corridors

Establish at least two species of native vegetation.

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

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

Hedgerows developed for wildlife should be a minimum of 25 feet wide, including 2 or more rows of woody plants. If ground-nesting birds are targeted, even wider widths should be considered to reduce nest predation.

Plant species established should be selected that benefit wildlife as either food or cover. Native species will be used whenever possible. At least 25% of the plants selected will be evergreen to provide year-round cover. A variety of fruit and nut producing trees and shrubs should be used as much as feasible. See "Management for Wildlife" and "Plant Materials for Wildlife" for suggestions on plant selection.

The hedgerow will be protected from grazing and/or browsing from livestock.

Any renovation activities within the hedgerow will be scheduled to accommodate reproduction and other requirements of target wildlife species. Renovation will be limited to one-third of a hedgerow's length to prevent sudden elimination of the practice's wildlife habitat function.

Additional Criteria for Living Fences

Selected plants shall attain a size adequate to create a barrier to contain livestock or humans as needed. Plant a predominance of trees and shrubs that are thorny or spiny.

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, Code 330 or Stripcropping, Code 585. Refer to those conservation practice standards for alignment criteria.

Additional Criteria for 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.

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, flowering, fruit production 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, and between the source of the odor or chemical drift and the sensitive area(s).

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.

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 are natural wildlife attractors; therefore, wildlife enhancement should be considered during planning, even when wildlife is not the primary purpose.

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

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.

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

Consider avoiding the use of plants that spread by root suckers as hedgerow may expand beyond the desired treatment area.

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 may increase wildlife use of an area.

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

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. The use of native, warm-season perennial grasses should be encouraged in all hedgerows.

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

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 the plant's seasonal display of colors on bark, twigs, foliage, flowers and fruit.

Consider the plant's growth habits (structure, and canopy 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.

PLANS AND SPECIFICATIONS

Plans and specifications for this practice 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.

Specifications shall include, but are not be limited to the following:

1. Plan map showing the location of the practice.
2. A sketch map showing the planting patterns to be used.
3. Plant species to be established and their desired performance density following establishment.
4. Land or site preparation to be performed.
5. Liming and fertilization requirements.
6. Planting rates, spacing, and dates.
7. Control of competition needed for establishment and maintenance.

OPERATION AND MAINTENANCE

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

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 its life span.

Pests shall be monitored and controlled.

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

Renovation activities shall be scheduled to prevent disturbance during the wildlife nesting season. To preserve wildlife habitat, renovate only one-third of the length of the hedgerow at a time, allowing re-growth before proceeding to the next section.

REFERENCES

Florida Exotic Pest Plant Council, Category I and II lists, <http://www.fleppc.org/>

Gilman, G.F. and R. J. Black. 1999. Your Florida Guide to Shrubs: Selection, establishment and maintenance. University Press of Florida. 116p.

Miller, J. H. and K. V. Miller. 1999. Forest Plants of the Southeast and Their Wildlife Uses. Southern Weed Science Society. 454pp.

NRCS. Field Office Technical Guide:

Section II: Threatened and Endangered Species

Section IV: Conservation Practice Standards, Fence, Code 382, Pasture and Hay Planting, Code 512 Tree/Shrub Establishment, Code FL612, Tree/Shrub Pruning, Code 660, Upland Wildlife Habitat Management, Code 655, Contour Farming, Code 330, Stripcropping, Code 585

NRCS. General Manual, Title 190-Compliance with NEPA, Part 410.22 – Threatened, and endangered species of plants and animals.
Title 190-Compliance with NEPA, Part 410.26 – Protection of wetlands
Title 420- Social Sciences, Part 401 – Cultural Resources (Archeological and Historic Properties)

NRCS. 1979. Management for Wildlife: A Supplement to Wildlife Standards and Specifications for Florida. Gainesville, FL. 89pp.

NRCS. 1999. National Biology Handbook, Part 614.4, Conservation Corridor Planning at the Landscape Level.

NRCS, Technical Note, FL Biology 37: Guidelines for Hedgerows

NRCS, National Planning Procedures Handbook, Part 600.5 – Exhibits: FL2 to FL6.

Shaefer, J. and G. Tanner. 1998. Landscaping for Florida's Wildlife: Re-creating Native Ecosystems in Your Yard. University of Florida Press. 92p.

Surrency, D. and C. Owsley. 2000. Plant Materials for Wildlife: Just In Time for WHIP. USDA-NRCS, Jimmy Carter Plant Materials Center, Americus, GA. 28pp.