

USDA NRCS Practice Standards and Agroforestry Systems



Joe Alley – USDA NRCS Columbia MO 7/22/2015

NRCS

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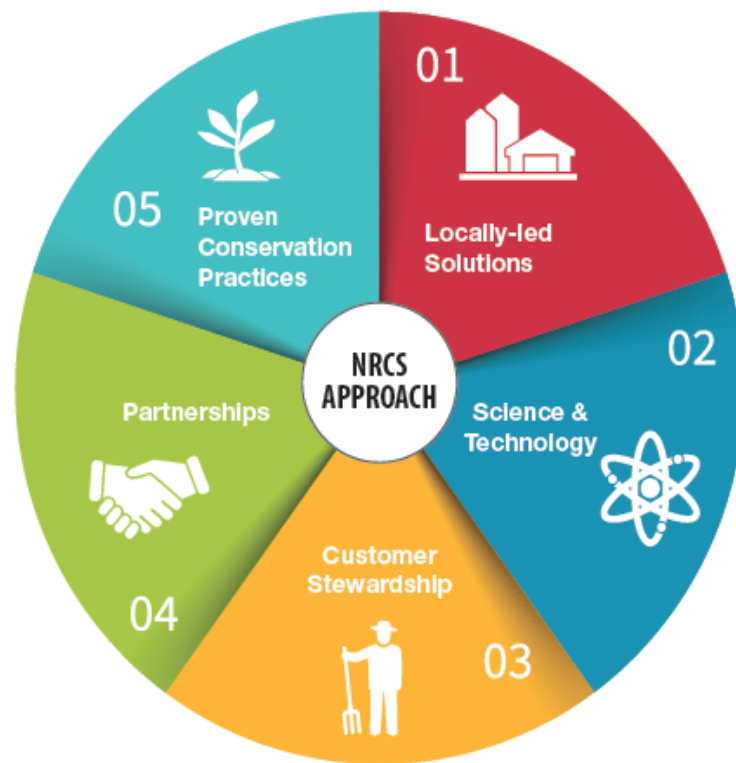
On April 27, 1935 Congress passed Public Law 74-46, in which it recognized that "the wastage of soil and moisture resources on farm, grazing, and forest lands . . . is a menace to the national welfare," and it directed the Secretary of Agriculture to establish the Soil Conservation Service (SCS) as a permanent agency in the USDA. In 1994, Congress changed SCS's name to the Natural Resources Conservation Service (NRCS) to better reflect the broadened scope of the agency's concerns.

NRCS works with farmers, ranchers and forest landowners across the country to help them boost agricultural productivity and protect our natural resources through conservation.

Roughly 70 percent of land in the lower 48 states is privately owned. The health of our environment and natural resources is not going to be decided on public lands, but by farmers, ranchers and forest landowners.

The United Nations projects a global population of 10.8 billion by 2100. Farmers and ranchers will have to produce as much food in the next 40 years as they have in the last 500. At the same time, we're facing impacts from climate change and extreme weather events. Severe droughts and flooding are becoming the norm. Our nation's agricultural land base is shrinking.

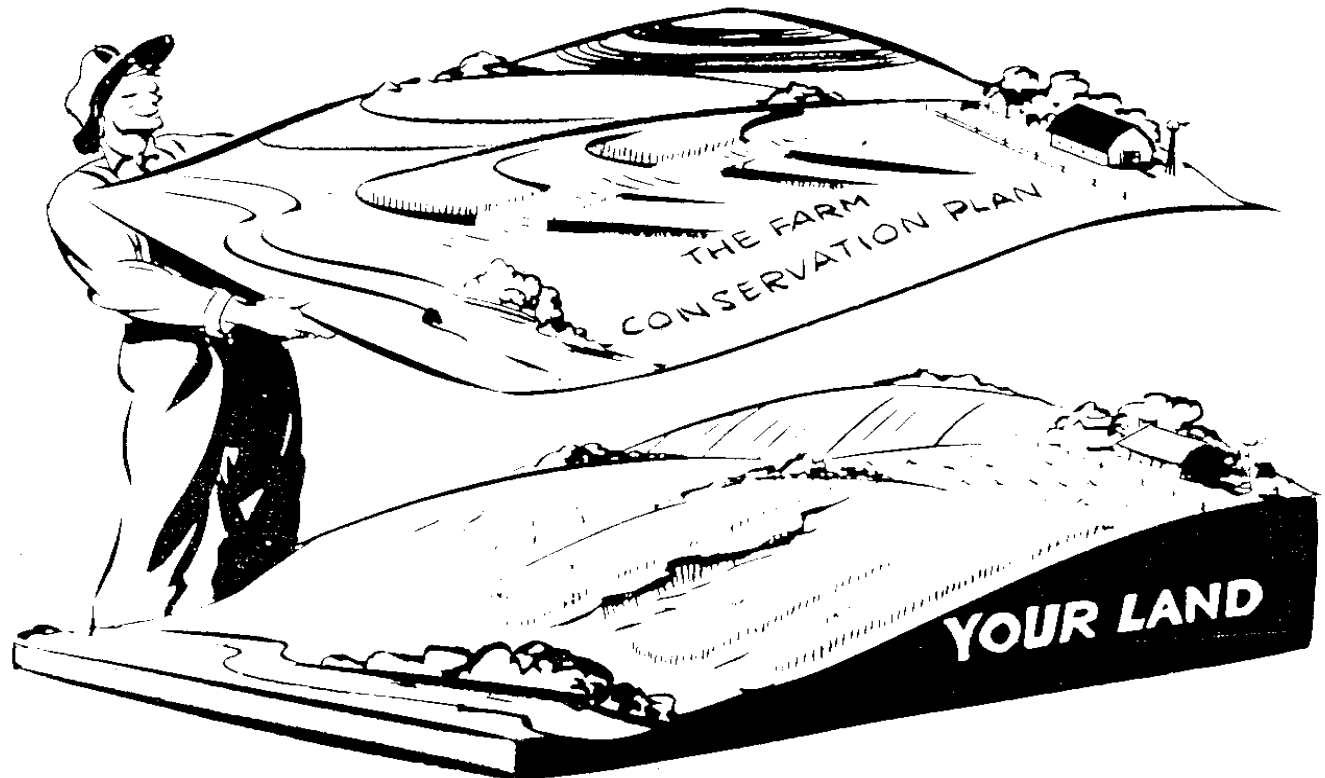
The conservation practices NRCS promotes are helping producers prepare for what's ahead. From systems that help improve the health of the soil and water to restoring wetlands and wildlife populations, we're helping to ensure the health of our natural resources and the long-term sustainability of American agriculture.



► NRCS' approach combines locally-led solutions with science and technology; customer stewardship; partnerships; and proven conservation practices to produce results for agriculture and the environment.

CONSERVATION PLAN

- Voluntary
- Site-specific
- Comprehensive
- Addresses Resource Concerns
- Driven by **Proven Conservation Practices**





Alley cropping - 311



Silvopasture - 381



Multi-Story Cropping – 379



Riparian Buffer – 391



Windbreak - 380

NRCS Agroforestry Practices

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- *Conservation Cover – 327*
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- *Contour Buffer Strips – 332*
- *Cover Crop – 340*
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- *Fence – 382*
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- *Forage & Biomass Harvest Mngt – 511*
- *Forest Stand Improvement - 666*
- *Herbaceous Weed Control – 315*
- *Irrigation (micro) – 441*
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- *Prescribed Burning - 338*
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- *Tree/Shrub Establishment – 612*
- *Tree/Shrub Pruning – 660*
- *Tree/Shrub Site Preparation – 490*
- *Upland Wildlife Habitat Mngt – 645*

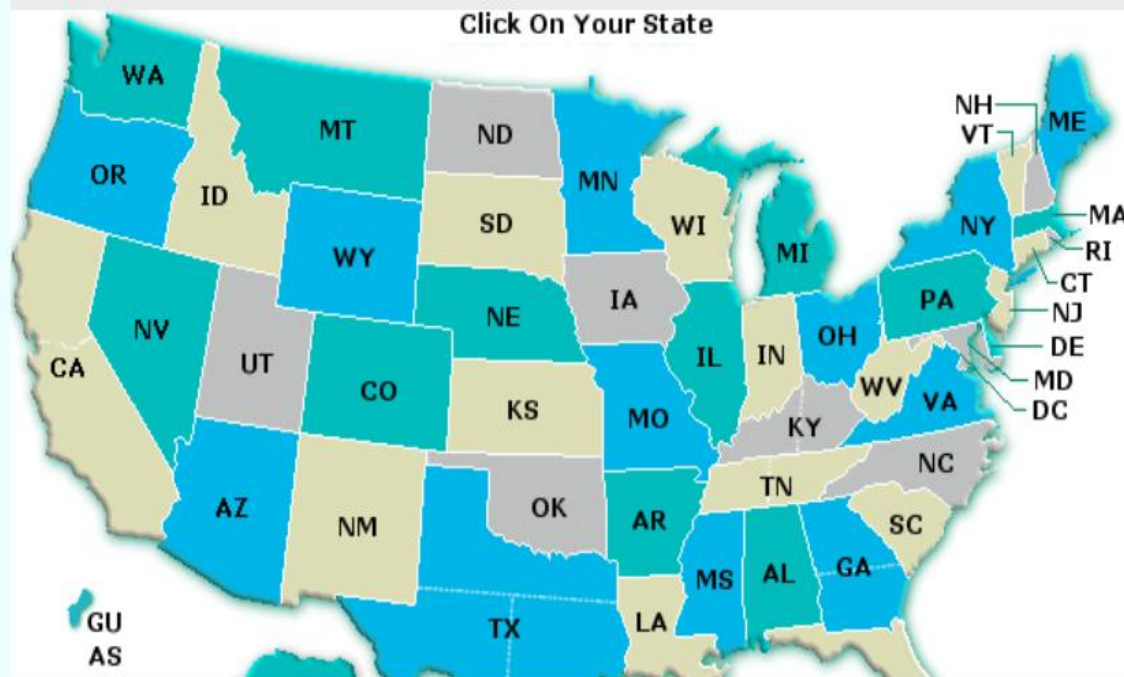
Supporting Practices

Windbreaks or shelterbelts are single or multiple rows of trees or shrubs in linear configurations.



Windbreaks 380

Click On Your State



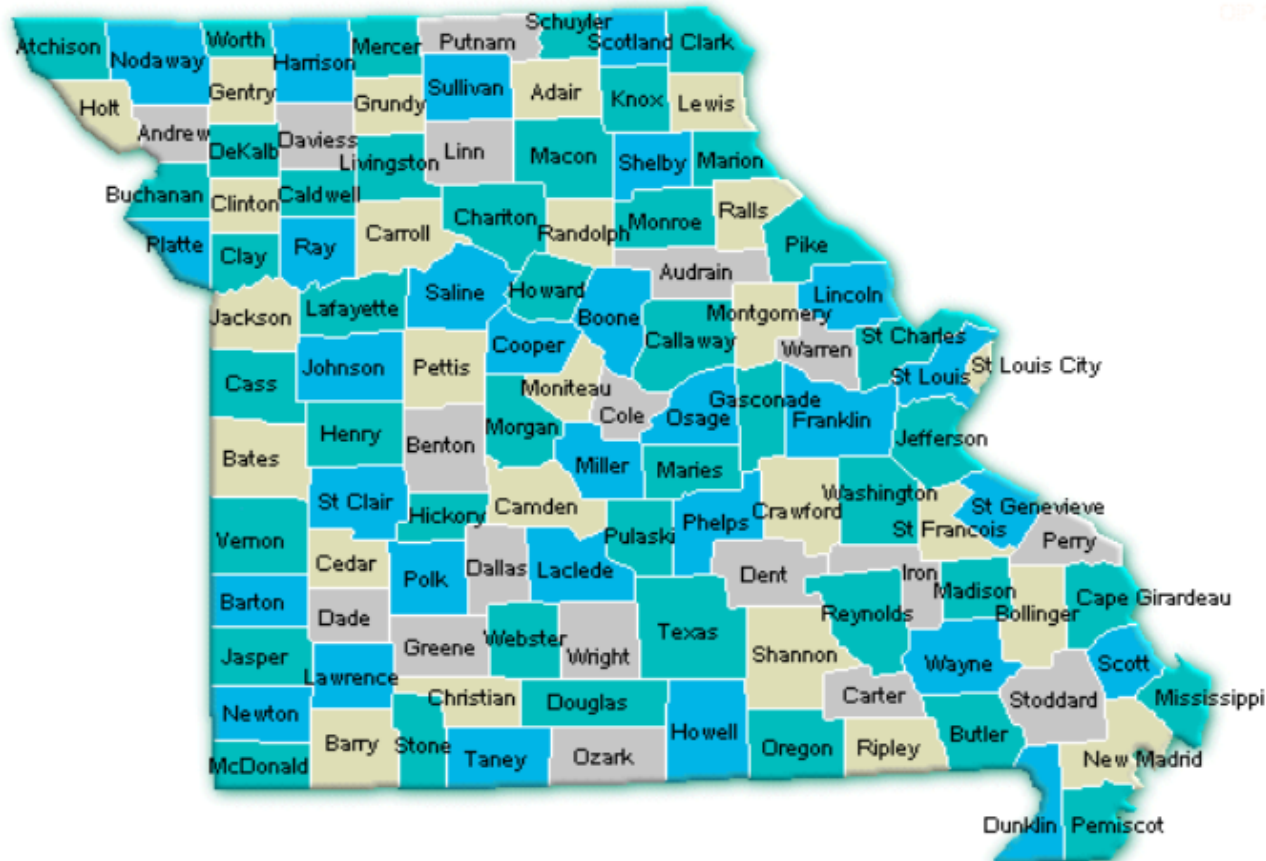
FOTG County Locator

Select your State of interest by clicking the map to the left.

Click on your state

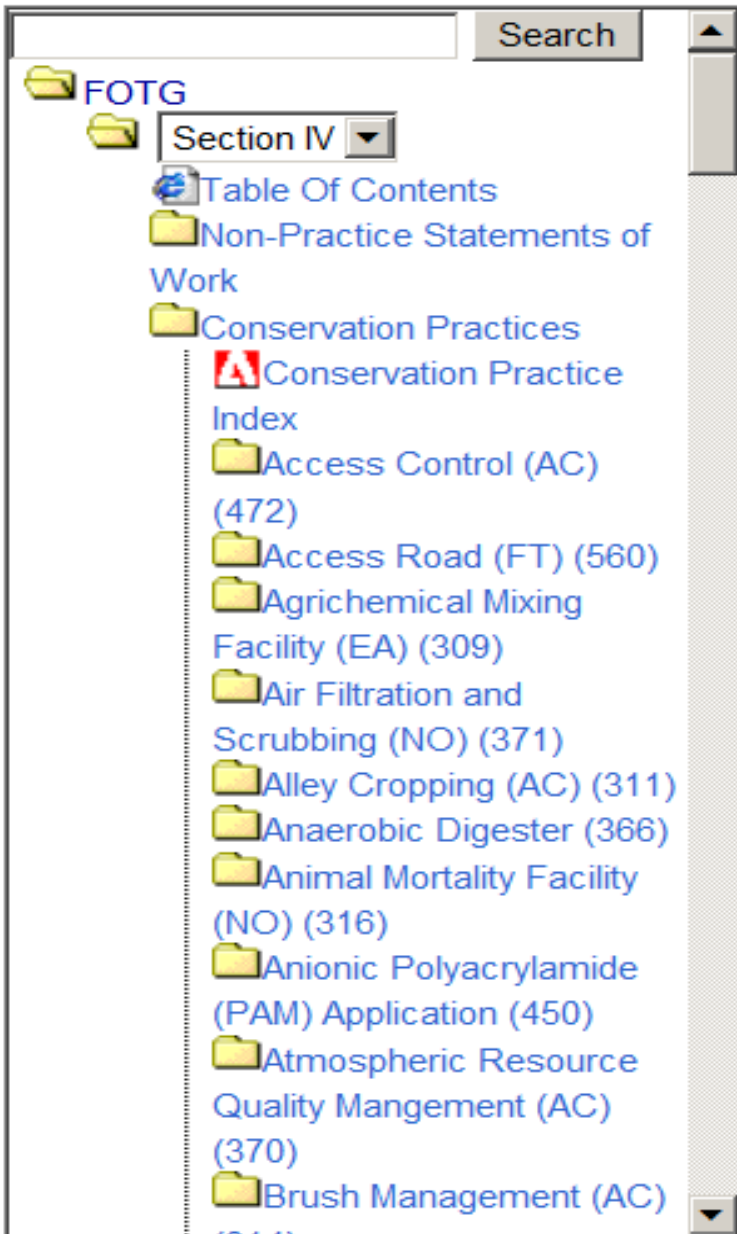
Missouri

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[Back to US Map](#)

Click on any county in your state



FOTG Home Page

What is FOTG?

Technical guides are the primary scientific references for NRCS. They contain technical information about the conservation of soil, water, air, and related plant and animal resources.

[...more](#)

For additional information and requirements please contact your local [USDA Service Center](#).

What's in FOTG?

Section I	- General References
Section II	- Natural Resources Information
Section III	- Conservation Management Systems
Section IV	- Practice Standards and Specifications
Section V	- Conservation Effects

[...more](#)

In The Spotlight



Tools

Technical Materials

Section IV contains Conservation Practices

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Windbreak/Shelterbelt
Establishment SOW
Practice
Documenation
Windbreak/Shelterbelt-
Odor Control Information
Sheet
Woody Residue
Treatment (AC) (384)

Windbreak, 380

Resource Concerns

NATURAL RESOURCES CONSERVATION SERVICE CONSERVATION PRACTICE STANDARD WINDBREAK/SHELTERBELT ESTABLISHMENT

(FEET)

CODE 380

DEFINITION

Windbreaks or shelterbelts are single or multiple rows of trees or shrubs in linear configurations.

PURPOSES

- Reduce soil erosion from wind.
- Protect plants from wind related damage.
- Alter the microenvironment for enhancing plant growth.
- Manage snow deposition.
- Provide shelter for structures, animals, and people.
- Enhance wildlife habitat.
- Provide noise screens.
- Provide visual screens.
- Improve air quality by reducing and intercepting air borne particulate matter, chemicals and odors.
- Delineate property and field boundaries.
- Improve irrigation efficiency.
- Increase carbon storage in biomass and soils.
- Reduce energy use

CONDITIONS WHERE PRACTICE APPLIES

Apply this practice on any areas where linear plantings of woody plants are desired and suited for controlling wind, noise, odor, and visual resources. Use other tree/shrub practices when wind, noise and visual problems are not concerns.

CRITERIA

General Criteria Applicable to All Purposes

The location, layout and density of the planting will accomplish the purpose and function intended within a 20-year period.

The design height (H) for the windbreak or shelterbelt shall be the expected height of the tallest row of trees or shrubs at age 20 for the given site.

The distance that protection extends from the windbreak's leeward side is proportional to its height. The most effective zone of protection extends to a distance 2 to 5 times (2H - 5H) its height, while significant protection extends to 10H.

Species must be adapted to the soils, climate and site conditions. Select windbreak species that minimize adverse affects to crop growth (e.g. shade, allelopathy, competing root systems or root sprouts).

Species shall be suited for the planned practice purpose(s).

Site preparation shall be sufficient for establishment and growth of selected species, not contribute to erosion, and be appropriate for the site. See TREE/SHRUB PREPARATION (490).

Only viable, high quality, and adapted planting stock or seed will be used.

Multiple species, within rows, may be used if heights and growth forms are similar.

Protect plantings from livestock grazing, wildlife damage, and fire.

The planting shall be done at a time and manner to insure survival and growth of selected species. Refer to TREE/SHRUB ESTABLISHMENT (812) for planting guidelines.

Conservation practice standards are reviewed periodically, and updated if needed. To obtain the current version of this standard, contact the Natural Resource Conservation Service or download the standard from the electronic Field Office Technical Guide for Missouri.

NRCS MOFOTG
January 2014

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- **Primary Resource Concerns**
 - *Odor*
 - *Energy*
- **Secondary Resource Concerns**
 - *Wildlife & Pollinators*
 - *Visual Screen*
- **Scheduling**
- **Planned Practices**
 - *Tree/Shrub Site Preparation – 490*
 - *Conservation Cover – 327*
 - *Tree/Shrub Establishment – 612*
 - *Mulching - 484*

The Process...

Windbreak Type	Number of Rows
farmstead/shelterbelt	3a
feedlot	3a
odor	3ah
screens	
high traffic	6c
med-low traffic	3b
visual	2ad
wildlife	5ah
field2e	
living snow fences	
unsheltered distance <1000 feet	1f
unsheltered distance >1000 feet	2g

a = 1 row must be evergreen

b = 2 row must be evergreen

c = 3 rows must be evergreen

d = 3 rows if all deciduous species are used

e = 2 rows of deciduous tree/shrub or
evergreen

f = 1 row of either shrub or evergreen

g = 2 rows - minimum one row of evergreen

h = 1 row must be shrubs







QUESTIONS???

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