

Info

What is a windbreak?

Working Trees



Vegetable crops in Alabama are protected by a Windbreak.

— NAC photo

Windbreaks are plantings of single or multiple rows of trees, shrubs or grass that protect crops, livestock, wildlife or people from wind's harmful consequences.

Historically, Windbreaks were planted for a single purpose, such as protecting homes from cold winds or soil from erosive winds. Today, Windbreaks are being used to address numerous

other problems and provide a variety of other benefits. When properly designed, located and managed Windbreaks can produce one or more environmental and economic benefits. It is important to remember that not all potential benefits can be realized from every Windbreak. In fact, some Windbreak purposes will require conflicting design characteristics.

Benefits of windbreaks

Improve income — Whether a grain, vegetable, hay, vine or orchard crop, net yields can be increased by 10 to 20 percent in fields with Windbreaks. Livestock experience improved weight gains resulting in lower feed costs. Heating and cooling costs for the farmstead can also be reduced. In addition, income producing plants such as fruit trees, nut trees and woody florals can be incorporated into a windbreak without reducing the beneficial functions..

Provide protection — Windbreaks protect crops, facilities, livestock, people, soil and water from the damaging effects of wind and wind blown material. Windbreaks can create a more

comfortable working and living environment by providing protection from cold winter winds, hot summer winds and blowing and drifting snow.

Store carbon — A dense tree and shrub planting, including Windbreaks, will create net gains in carbon storage or sequestration. As the plantings mature this helps to rebalance the global carbon cycle.

Enhance aesthetics — Windbreaks generally add desirable plant variety that enhances the appearance of the landscape. Windbreaks also can screen undesirable views and provide opportunities for protecting and viewing wildlife.

Considerations for windbreaks

Vegetation — Final selection of the species of trees and shrubs to plant will vary at each facility and farm site and should be based on: soil type, natural drainage, common wind conditions, annual precipitation, natural range of each woody species and site needs.

Density — The more solid or dense a Windbreak, the greater the wind speed reduction. However, less dense plantings provide protection to a greater distance. Density can be managed by the plant species chosen, the spacing within and between rows and the number of rows.



Windbreaks can increase net yields of many crops by 10 to 20 percent.

— NAC photo

Orientation — Windbreaks are most effective when oriented at right angles to troublesome winds. To allow for changes in wind direction, Windbreaks are often planted in multiple directions — in an L-shape or an arc. Avoid placement that may interfere with overhead lines, buried cable and road visibility.

Height and Length — The height determines how far downwind the protection will reach. For adequate protection the Windbreak must be taller than what is being protected. The length helps determine the total area that will be protected.

Pest Control — Because every tree counts in a Windbreak, it is important to regularly monitor for the presence of insects and diseases. Early detection and treatment is the most effective way to control pests. Wildlife and livestock can also cause damage that is best prevented with fences or other deterrents.

Management — Proper care of the Windbreak is critical to its long-term functioning. Windbreaks need regular maintenance and attention from the day they are planted. Practices such as weed control, protection from livestock and wildlife damage, corrective pruning, replanting, insect and disease control, and supplemental watering may be needed on a continuing or periodic basis.



Living snow fences can be an effective way to control blowing and drifting snow, reduce snow removal costs and accidents.

— NRCS photo by Craig Stange

More information on the Web

USDA National Agroforestry Center www.unl.edu/nac/windbreaks.htm

The Center for Agroforestry www.centerforagroforestry.org/practices/wb.php

Association for Temperate Agroforestry www.aftaweb.org/windbreaks.php

Natural Resources Conservation Service www.nrcs.usda.gov/technical/standards/nhcp.html



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