

CONSERVATION TREE AND SHRUB MANAGEMENT  
Pratt County, Kansas

A Conservation Tree/Shrub Suitability Group (CTSG), formerly Windbreak Suitability Group, is a physiographic unit or area having similar climatic and edaphic characteristics that control the selection and height growth of trees and shrubs.

In this table, the Conservation Tree and Shrub Grouping is expressed as a group index number. The group index for Conservation Tree and Shrub groups (CTSG) are a guide for species best suited for different kinds of soil and for prediction height, growth, and effectiveness. The groupings can be used when selection woody plants for windbreaks, wildlife plantings riparian buffers, reforestation, other environmental plantings, recreation, landscaping, wetland restoration or enhancement and critical area plantings. CTSG's are developed to assure satisfactory species selection and adaptation to specific conditions of soil, climate and physiography. CTSG's are a guide for selection species best suited for different kinds of soil and prediction height growth and effectiveness.

All soil series mapped in the state have been placed in 10 groups of similar soil characteristics. Groups 1, 2, 3, 4, 6, and 9 are further divided into subgroups. In addition, all groups provide information by Major Land Resource Areas.

Each tree or shrub species has certain climatic and physiographic limits. Within these parameters a tree or shrub may be well or poorly suited because of soil characteristics. Each tree or shrub also has definable potentials of height growth depending on the factors just mentioned. Accurate definitions of potential heights are necessary for proper windbreak planning and design.

Windbreaks protect livestock, buildings, roads and yards from wind and snow. They also protect fruit trees and gardens, and they furnish habitat for wildlife. Several rows of low-growing and high-growing broadleaf and coniferous trees and shrubs provide the most protection.

Field windbreaks are narrow plantings made at right angles to the prevailing wind and at specific intervals across the field. The interval depends on the erodibility of the soil. Field windbreaks protect cropland and crops from wind, help to keep snow on the fields, and provide food and cover for wildlife.

Environmental plantings help to beautify and screen houses and other buildings and to abate noise. The plants, mostly evergreen shrubs and trees, are closely spaced. To ensure plant survival, a healthy planting stock of suitable species should be planted properly on a well prepared site and maintained in good condition.

Windbreaks are often planted on land that did not grow trees originally. Knowledge of how trees perform on such land can be gained only by observing and recording their performance where trees have been planted and survived. The problem is compounded by the fact that many favorite windbreak species are not indigenous to the areas in which they are planted.

The Kansas Field Office Technical Guide Notice KS-230, Conservation Tree and Shrub Plantings Suitability Groups shows the adapted species listing for each group index number. Showing the height that locally grown trees and shrubs are expected to reach in 20 years on various soils. The estimates are based on measurements and observation of established plantings that have been given adequate care. This information should be used to determine the placement of a windbreak, the area protected and the arrangement of species.

A number of attributes are included in the CTSG species tables for each group number found in this section of the Field Office Technical Guide. These attributes were rated subjectively and assigned a relative value to further assist those unfamiliar with individual species characteristics or desirability for the intended use. Definitions and explanations can be found. Additional information on planning windbreaks and screens and planting and caring for trees and shrubs can be obtained from the local office of the Natural Resources Conservation Service or of the Cooperative Extension Service or from a commercial nursery. See part 537 of the National Forestry Manual for additional information.

In the Tree and Shrub Management table interpretive ratings are given for various aspects of forest and conservation tree and shrub management. Some rating class terms indicate the degree to which the soils are suited to a specified forest management practice. Well suited indicates that the soil has features that are favorable for the specified practice and has no limitations. Good performance can be expected, and little or no maintenance is needed. Moderately well suited indicates that the soil has features that are moderately favorable for the specified practice. One or more soil properties are less than desirable and fair performance can be expected. Some maintenance is needed. Poorly suited indicates that the soil has one or more properties that are unfavorable for the specified practice. Overcoming the unfavorable properties requires special design, extra maintenance, and costly alteration. Unsited indicates that the expected performance of the soil is unacceptable for the specified practice or that extreme measures are needed to overcome the undesirable soil properties.

The paragraphs that follow indicate the soil properties considered in rating the soils for forest and conservation tree and shrub management practices. More detailed information about the criteria used in the ratings is available in the "National Forestry Manual," which is available in local offices of the Natural Resources Conservation Service or on the Internet. Also, in the Kansas Field Office Technical Guide Notice KS-230, Conservation Tree and Shrub Plantings Suitability Groups.

Ratings in the columns suitability for hand planting and suitability for mechanical planting are based on slope, depth to a restrictive layer, content of sand, plasticity index, rock fragments on or below the surface, depth to a water table, and ponding. The soils are described as well suited, moderately well suited, poorly suited, or unsited to these methods of planting. It is assumed that necessary site preparation is completed before seedlings are planted.

Ratings in the column suitability for mechanical site preparation (surface) are based on slope, depth to a restrictive layer, plasticity index, rock fragments on or below the surface, depth to a water table, and ponding. The soils are described as well suited, poorly suited, or unsited to this management activity. The part of the soil from the surface to a depth of about 1-foot is considered in the ratings.

Ratings in the column suitability for mechanical site preparation (deep) are based on slope, depth to a restrictive layer, rock fragments on or below the surface, depth to a water table, and ponding. The soils are described as well suited, poorly suited, or unsited to this management activity. The part of the soil from the surface to a depth of about 3 feet is considered in the ratings.

Ratings in the column potential for seedling mortality are based on flooding, ponding, depth to a water table, content of lime, reaction, salinity, available water capacity, soil moisture regime, soil temperature regime, aspect, and slope. The soils are described as having a low, moderate, or high potential for seedling mortality. See the National Forestry Manual, Subpart B for criteria used in rating management concerns. Specific information on plants and yields can be obtained from the local office of the Natural Resources Conservation Service or the Cooperative Extension Service.

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Map symbol and soil name	Wind break Group	Suitability for hand planting	Suitability for mechanical planting	Suitability for mechanical site preparation (surface)	Suitability for mechanical site preparation (deep)	Potential for seedling mortality
		Rating class and limiting features	Rating class and limiting features	Rating class and limiting features	Rating class and limiting features	Rating class and limiting features
007AE: Albion-----	6G	Well suited	Moderately suited Slope	Well suited	Well suited	Low
Shellabarger-----	5	Well suited	Moderately suited Slope	Well suited	Well suited	Low
007CC: Case-----	8	Well suited	Well suited	Well suited	Well suited	Moderate Soil reaction
Clark-----	8	Well suited	Well suited	Well suited	Well suited	Moderate Lime Soil reaction
007LN: Lincoln-----	1K	Well suited	Well suited	Well suited	Well suited	Moderate Soil reaction
007SB: Shellabarger-----	5	Well suited	Moderately suited Slope	Well suited	Well suited	Low
047PG: Pratt-----	7	Well suited	Well suited	Well suited	Well suited	Low
095AB: Albion-----	6G	Well suited	Well suited	Well suited	Well suited	Low
095DA: Dillwyn-----	1	Well suited	Well suited	Well suited	Well suited	Low
Plevna-----	2	Well suited	Well suited	Well suited	Unsuited Wetness	High Wetness
097AS: Albion-----	6G	Well suited	Moderately suited Slope	Well suited	Well suited	Low
Shellabarger-----	5	Well suited	Moderately suited Slope	Well suited	Well suited	Low
097CE: Case-----	8	Well suited	Moderately suited Slope	Well suited	Well suited	Moderate Soil reaction
097CK: Clark-----	8	Well suited	Well suited	Well suited	Well suited	Moderate Lime Soil reaction
097CM: Clark-----	8	Well suited	Moderately suited Slope	Well suited	Well suited	Moderate Lime Soil reaction
1005: Albion-----	6G	Well suited	Well suited	Well suited	Well suited	Moderate Available water
1006: Albion-----	6G	Well suited	Moderately suited Slope	Well suited	Well suited	Moderate Available water
1017: Shellabarger, Eroded	5	Well suited	Moderately suited Slope	Well suited	Well suited	Moderate Available water
Albion-----	6G	Well suited	Moderately suited Slope	Well suited	Well suited	Moderate Available water
1324: Carway-----	2	Well suited	Well suited	Well suited	Well suited	High Wetness
Carbika-----	2	Poorly suited Stickiness	Poorly suited Stickiness	Poorly suited Stickiness	Well suited	High Wetness
1340: Case-----	8	Well suited	Moderately suited Slope	Well suited	Well suited	Moderate Soil reaction
Clark-----	3	Well suited	Moderately suited Slope	Well suited	Well suited	Moderate Soil reaction
1341: Case-----	8	Well suited	Moderately suited	Well suited	Well suited	Moderate

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		Rating class and limiting features	Rating class and limiting features	Rating class and limiting features	Rating class and limiting features	Rating class and limiting features
Clark-----	3	Well suited	Slope Moderately suited Slope	Well suited	Well suited	Soil reaction Moderate
1725: Farnum-----	4	Well suited	Well suited	Well suited	Well suited	Soil reaction Low
Funmar-----	3	Well suited	Well suited	Well suited	Well suited	Low
1726: Farnum-----	4	Well suited	Well suited	Well suited	Well suited	Low
Funmar-----	3	Well suited	Well suited	Well suited	Well suited	Low
1985: Hayes-----	5	Well suited	Well suited	Well suited	Well suited	Moderate Available water
1986: Hayes-----	5	Well suited	Well suited	Well suited	Well suited	Moderate Available water
Solvay-----	5	Well suited	Well suited	Well suited	Well suited	Moderate Available water
1987: Hayes-----	5	Well suited	Well suited	Well suited	Well suited	Moderate Available water
Turon-----	7	Moderately suited Sandiness	Moderately suited Sandiness	Well suited	Well suited	Low
1988: Hayes-----	5	Well suited	Moderately suited Slope	Well suited	Well suited	Moderate Available water
2556: Langdon-----	7	Moderately suited Sandiness	Moderately suited Sandiness Slope	Well suited	Well suited	Low
2948: Nalim-----	3	Well suited	Well suited	Well suited	Well suited	Low
3051: Ost-----	8	Well suited	Well suited	Well suited	Well suited	Low
3053: Ost-----	8	Well suited	Well suited	Well suited	Well suited	Low
3180: Pratt-----	7	Well suited	Moderately suited Slope	Well suited	Well suited	Low
3181: Pratt-----	7	Well suited	Well suited	Well suited	Well suited	Low
Turon-----	7	Moderately suited Sandiness	Moderately suited Sandiness	Well suited	Well suited	Low
3445: Shellabarger, Moderately Eroded--	5	Well suited	Well suited	Well suited	Well suited	Moderate Available water
3510: Saltcreek-----	5	Well suited	Well suited	Well suited	Well suited	Moderate Available water
Funmar-----	3	Well suited	Well suited	Well suited	Well suited	Low
Farnum-----	4	Well suited	Well suited	Well suited	Well suited	Low
3512: Saltcreek-----	5	Well suited	Well suited	Well suited	Well suited	Moderate Available water
Naron-----	5	Well suited	Well suited	Well suited	Well suited	Moderate Available water
3533: Shellabarger-----	5	Well suited	Well suited	Well suited	Well suited	Moderate Available water
3534: Shellabarger-----	5	Well suited	Well suited	Well suited	Well suited	Moderate Available water
3540: Solvay-----	5	Well suited	Well suited	Well suited	Well suited	Moderate

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		Rating class and limiting features	Rating class and limiting features	Rating class and limiting features	Rating class and limiting features	Rating class and limiting features
3639: Taver-----	3	Poorly suited Stickiness	Poorly suited Stickiness	Poorly suited Stickiness	Well suited	Available water
3640: Tivin-----	7	Moderately suited Sandiness	Moderately suited Slope Sandiness	Poorly suited Slope	Poorly suited Slope	Moderate Available water Low
3644: Turon-----	7	Moderately suited Sandiness	Moderately suited Sandiness	Well suited	Well suited	Low
Carway-----	2	Well suited	Well suited	Well suited	Well suited	High Wetness
3926: Water-----		Not rated	Not rated	Not rated	Not rated	Not rated
4005: Yaggy-----	1	Well suited	Well suited	Well suited	Well suited	Moderate Available water Low
Saxman-----	1	Well suited	Well suited	Well suited	Well suited	Low
Ab: Albion-----	6G	Well suited	Well suited	Well suited	Well suited	Low
Ao: Albion-----	6G	Well suited	Moderately suited Slope	Well suited	Well suited	Low
As: Albion-----	6G	Well suited	Moderately suited Slope	Well suited	Well suited	Low
Shellabarger-----	5	Well suited	Moderately suited Slope	Well suited	Well suited	Low
Bc: Blanket-----	4C	Moderately suited Stickiness	Moderately suited Stickiness	Well suited	Well suited	Low
Be: Blanket-----	4C	Well suited	Well suited	Well suited	Well suited	Low
Bh: Blanket-----	4C	Well suited	Well suited	Well suited	Well suited	Low
Br: Fluvents-----		Well suited	Moderately suited Slope	Poorly suited Slope	Poorly suited Slope	Low
Ca: Carwile-----	1	Moderately suited Stickiness	Moderately suited Stickiness	Well suited	Well suited	High Wetness
Cc: Case-----	8	Well suited	Moderately suited Slope	Well suited	Well suited	Moderate Soil reaction
Clark-----	8	Well suited	Moderately suited Slope	Well suited	Well suited	Moderate Soil reaction
Ck: Case-----	8	Well suited	Moderately suited Slope	Well suited	Well suited	Moderate Soil reaction
Clark-----	8	Well suited	Moderately suited Slope	Well suited	Well suited	Moderate Soil reaction
Cm: Clark-----	8	Well suited	Well suited	Well suited	Well suited	Lime Soil reaction
Cn: Clark-----	8	Well suited	Well suited	Well suited	Well suited	Moderate Lime Soil reaction
Co: Clark-----	8	Well suited	Well suited	Well suited	Well suited	Moderate Lime Soil reaction

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		Rating class and limiting features	Rating class and limiting features	Rating class and limiting features	Rating class and limiting features	Rating class and limiting features
Ost----- Cs: Lincoln-----	3 1K	Well suited Well suited	Well suited Well suited	Well suited Well suited	Well suited Well suited	Low Moderate Soil reaction
Fa: Farnum-----	3	Moderately suited Stickiness	Moderately suited Slope Stickiness	Well suited	Well suited	Low
Fe: Farnum-----	3	Moderately suited Stickiness	Moderately suited Stickiness	Well suited	Well suited	Low
Fm: Farnum-----	3	Well suited	Well suited	Well suited	Well suited	Low
Fn: Farnum-----	3	Moderately suited Stickiness	Moderately suited Stickiness	Well suited	Well suited	Low
Fu: Farnum-----	3	Moderately suited Stickiness	Moderately suited Slope Stickiness	Well suited	Well suited	Low
Fw: Farnum-----	3	Moderately suited Stickiness	Moderately suited Stickiness	Well suited	Well suited	Low
Carwile-----	1	Moderately suited Stickiness	Moderately suited Stickiness	Well suited	Well suited	High Wetness
GRP: Pits-----		Not rated	Not rated	Not rated	Not rated	Not rated
INT: Aquolls-----		Well suited	Well suited	Well suited	Well suited	High Wetness Soil reaction
Kp: Kanza----- Plevna-----	2 2	Well suited Well suited	Well suited Well suited	Well suited Well suited	Well suited Unsuited Wetness	Low High Wetness
Ks: Elandco-----	1	Well suited	Well suited	Well suited	Well suited	Low
Kw: Elandco-----	1	Well suited	Well suited	Well suited	Well suited	Low
Nd: Naron-----	5	Well suited	Well suited	Well suited	Well suited	Low
Nf: Naron-----	5	Well suited	Well suited	Well suited	Well suited	Low
Ng: Naron-----	5	Well suited	Moderately suited Slope	Well suited	Well suited	Low
Nk: Naron-----	5	Well suited	Well suited	Well suited	Well suited	Low
Nm: Naron-----	5	Well suited	Well suited	Well suited	Well suited	Low
Nn: Naron----- Farnum-----	5 3	Well suited Moderately suited Stickiness	Well suited Moderately suited Stickiness	Well suited Well suited	Well suited Well suited	Low Low
Oc: Ost-----	3	Well suited	Well suited	Well suited	Well suited	Low
Os: Ost-----	3	Well suited	Well suited	Well suited	Well suited	Low
Pm: Pratt-----	7	Well suited	Moderately suited Slope	Well suited	Well suited	Low
Pn: Pratt-----	7	Well suited	Moderately suited Slope	Well suited	Well suited	Low
Po: Pratt-----	7	Well suited	Moderately suited Slope	Well suited	Well suited	Low

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		Rating class and limiting features	Rating class and limiting features	Rating class and limiting features	Rating class and limiting features	Rating class and limiting features
Carwile-----	1	Moderately suited Stickiness	Moderately suited Stickiness	Well suited	Well suited	High Wetness
PRR: Pratt-----	7	Well suited	Well suited	Well suited	Well suited	Low
PSS: Pratt-----	7	Well suited	Moderately suited Slope	Well suited	Well suited	Low
Pt: Pratt-----	7	Well suited	Moderately suited Slope	Well suited	Well suited	Low
Tivoli-----	7	Moderately suited Sandiness	Moderately suited Slope Sandiness	Well suited	Well suited	Low
PTT: Pratt-----	7	Well suited	Moderately suited Slope	Well suited	Well suited	Low
Tivoli-----	7	Moderately suited Sandiness	Moderately suited Slope Sandiness	Well suited	Well suited	Low
Sa: Albion-----	6G	Well suited	Moderately suited Slope	Well suited	Well suited	Low
Kaski-----	1K	Well suited	Well suited	Well suited	Well suited	Low
Sb: Shellabarger-----	5	Well suited	Well suited	Well suited	Well suited	Low
Se: Shellabarger-----	5	Well suited	Well suited	Well suited	Well suited	Low
Sf: Shellabarger-----	5	Well suited	Moderately suited Slope	Well suited	Well suited	Low
Ta: Tabler-----	4C	Moderately suited Stickiness	Moderately suited Stickiness	Well suited	Well suited	Low
Tf: Tivoli-----	7	Moderately suited Sandiness	Poorly suited Slope Sandiness	Poorly suited Slope	Poorly suited Slope	Low
W: Water-----		Not rated	Not rated	Not rated	Not rated	Not rated
Wa: Waldeck-----	1K	Well suited	Well suited	Well suited	Well suited	Moderate Soil reaction
Wd: Kingman-----	2	Well suited	Well suited	Well suited	Well suited	High Wetness Soil reaction
Ze: Zenda-----	1	Well suited	Well suited	Well suited	Well suited	Low
Zs: Drummond-----	9W	Moderately suited Stickiness	Moderately suited Stickiness	Well suited	Well suited	High Salinity Soil reaction
Zenda-----	1	Well suited	Well suited	Well suited	Well suited	Low

