

Conservation Tree/Shrub Groups (CTSG)

Groups 1-10

Group 1

Soils in this group are deep (at least 40 inches to a restrictive layer). There is a beneficial growing season water table within three to five feet of the surface; or they receive beneficial moisture from occasional flooding or runoff from adjacent land due to favorable landscape positions. These soils are well suited to all types of woody plantings, and all climatically suited trees and shrubs have the potential to grow well.

Competition from grass and weeds is the principal concern in establishing and managing trees and shrubs. Occasionally, somewhat poorly drained soils may have excessive water for some species.

Subgroup 1K – Carbonates

Soil criteria in this subgroup are the same as Group 1 except in the upper 12 inches of the soil profile free carbonates range between 5 and 15 percent calcium carbonate equivalent. High surface soil pH, ranging from 7.4 to 8.4, will have an effect on the selection of species suitable for this subgroup.

Subgroup 1KK – High Carbonates

Soil criteria in this subgroup are the same as Group 1 except in the upper 12 inches of the soil profile free carbonates range between 15 and 40 percent calcium carbonate equivalent. High surface soil pH, ranging from 7.8 to 8.4, will have an effect on the selection of species suitable for this subgroup.

Group 2

Soils in this group are deep (at least 40 inches to a restrictive layer). A seasonal water table within 1.5 to 3 feet of the surface contributes to a poorly drained or somewhat poorly drained condition. It is excessively wet or ponded during the spring or overflow periods.

Wetness limits the selection of tree and shrub species suitable for planting on these soils and may reduce the growth rate.

Competition from grass and weeds is the principal concern in establishing and managing trees and shrubs. Spring planting may be delayed because of wet conditions.

Subgroup 2K – Carbonates

Soil criteria in this subgroup are the same as Group 2 except in the upper 12 inches of the soil profile free carbonates range between 5 and 15 percent calcium carbonate equivalent. High surface soil pH, ranging from 7.4 to 8.4, will have an effect on the selection of species suitable for this subgroup.

Subgroup 2KK – High Carbonates

Soil criteria in this subgroup are the same as Group 2 except in the upper 12 inches of the soil profile free carbonates range between 15 and 40 percent calcium carbonate equivalent. High surface soil pH, ranging from 7.8 to 8.4, will have an effect on the selection of species suitable for this subgroup.

Group 3

Soils in this group are deep (at least 40 inches to a restrictive layer). The depth to a water table during the growing season is greater than five feet. Soils within this group are well drained, loamy textured soils with moderate and moderately slow permeability on uplands. These soils

are well suited to all types of woody plantings. Except for those trees and shrubs that require abundant moisture, all climatically suited trees and shrubs have the potential to grow well.

Competition from grass and weeds is the principal concern in establishing and managing trees and shrubs on these soils. Water erosion is a concern on the gently sloping to moderately steep areas.

Group 4

Soil depth to a restrictive layer is at least 20 inches. Soils in this group have loamy surface textures with clayey subsoils. They have slow or very slow permeability, and occur on uplands. These soils are fairly well suited to woody plantings. Most of the climatically suited trees and shrubs grow well; however, optimum growth is not possible because of the limited available water capacity and root development zone.

High clay content and water availability have an effect on the selection of tree and shrubs species suitable for these soils.

Competition from grass and weeds is the principal concern in establishment and management of trees and shrubs. Water erosion is a concern on the gently sloping to moderately steep areas.

Subgroup 4K – Carbonates

Soil criteria in this subgroup are the same as Group 4 except in the upper 12 inches of the soil profile free carbonates range between 5 and 15 percent calcium carbonate equivalent. High surface soil pH, ranging from 7.4 to 8.4, will have an effect on the selection of species suitable for this subgroup.

Group 4C

Soil depth to a restrictive layer is at least 20 inches. Soils in this group have clayey textures throughout the profile. They have slow or very slow permeability, and occur on uplands. These soils are fairly well suited to woody plantings. Most of the climatically suited trees and shrubs grow well; however, optimum growth is not possible because of the limited available water capacity and root development zone.

High clay content and water availability have an effect on the selection of tree and shrubs species suitable for these soils.

Competition from grass and weeds is the principal concern in establishment and management of trees and shrubs. The clayey soils are subject to severe wind erosion. Water erosion is a concern on the gently sloping to moderately steep areas.

Subgroup 4CK – Carbonates

Soil criteria in this subgroup are the same as Group 4C except in the upper 12 inches of the soil profile free carbonates range between 5 and 15 percent calcium carbonate equivalent. High surface soil pH, ranging from 7.4 to 8.4, will have an effect on the selection of species suitable for this subgroup.

Subgroup 4CC – Very Slow Permeability

Soil criteria in this subgroup are the same as Group 4C. The high clay content throughout the profile causes the permeability to be very slow (less than 0.06 inches/hour).

Group 5

Soils in this group are deep (at least 40 inches to a restrictive layer), with loamy or sandy textured soils on uplands. This group typically includes soils that normally have adequate soil moisture (available water capacity ranges from 3.75 to 7.5 inches). These soils are well suited to woody plantings. All climatically suited trees and shrubs have the potential to grow well, except those that require abundant moisture.

Competition from grass and weeds and abrasion from blowing are the principal concerns in establishing and managing trees and shrubs on these soils. These soils are subject to severe wind erosion.

Subgroup 5K – Carbonates

Soil criteria in this subgroup are the same as Group 5 except in the upper 12 inches of the soil profile free carbonates range between 5 and 15 percent calcium carbonate equivalent. High surface soil pH, ranging from 7.4 to 8.4, will have an effect on the selection of species suitable for this subgroup.

Group 6D

Soil depth to a restrictive layer is between 20 and 40 inches. Soils in this group are well drained, mostly loamy textures, with a root restrictive layer, such as bedrock or a cemented layer, between 20 and 40 inches. They have low or moderate available water capacity. These soils are poorly suited to woody plantings. Plantings can be established, but optimum survival and growth should not be expected.

Droughtiness will have an effect on the selection of tree and shrub species for use on these soils. Competition from grass and weeds is the principal concern in establishing and managing trees and shrubs. Water erosion is a concern on gently sloping to moderately steep areas. Supplemental watering may be needed for establishment.

Subgroup 6DK – Carbonates

Soil criteria in this subgroup are the same as Group 6D except in the upper 12 inches of the soil profile free carbonates range between 5 and 15 percent calcium carbonate equivalent. High surface soil pH, ranging from 7.4 to 8.4, will have an effect on the selection of species suitable for this subgroup.

Group 6G

Soil depth to a restrictive layer is at least 20 inches. Soils in this group are well drained, mostly loamy textures, over sand and/or gravel that can severely restrict root growth. They have low or moderate available water capacity. These soils are poorly suited to woody plantings. Plantings can be established, but optimum survival and growth should not be expected.

Droughtiness will have an effect on the selection of tree and shrub species for use on these soils. Competition from grass and weeds is the principal concern in establishing and managing trees and shrubs. Water erosion is a concern on gently sloping to moderately steep areas. Supplemental watering may be needed for establishment.

Group 7

Soils in this group are deep, excessively to moderately well drained, sandy in texture, typically have low or very low available water capacity, and do not normally have adequate moisture. These soils are poorly suited to woody plantings.

Coniferous trees are better suited than deciduous trees and shrubs. Optimum survival and growth should not be expected.

Drought conditions and abrasion from soil blowing are the principal concerns in establishing and managing trees and shrubs on these soils.

Specialized site preparation (due to sand that is subject to blowouts) and specialized planting methods (vegetation between the rows is normally left undisturbed) are needed to establish the trees and shrubs. Supplemental watering may be essential for successful establishment.

Group 8

Soils in this group are calcareous at or near the surface. They do not receive beneficial moisture from run-in, flooding, or seasonal high water table. These soils are poorly suited to

woody plantings. It is possible to establish plantings but these soils contain enough calcium carbonate at or near the surface to adversely effect the survival and growth of trees and shrubs.

High calcium content and competition from grass and weeds are the principal concerns in establishing and managing trees and shrubs on these soils. Water erosion is a concern on gently sloping to moderately steep areas.

Subgroup 8K – High Carbonates

Soil criteria in this subgroup are the same as Group 8 except in the upper 12 inches of the soil profile free carbonates range between 15 and 40 percent calcium carbonate equivalent. High surface soil pH, ranging from 7.8 to 8.4, will have an effect on the selection of species suitable for this subgroup.

Group 9

Soils in this group are affected by salinity and/or sodicity (dense claypan subsoil). These soils are very poorly suited to woody plantings.

Concentrations of salt will severely affect the establishment, vigor, and growth of trees and shrubs on these soils.

Subgroup 9C – Clayey saline and/or sodic soils with no seasonal high water table.

Subgroup 9L – Loamy saline and/or sodic soils with no seasonal high water table.

Subgroup 9W – Saline and/or sodic soils with a seasonal high water table.

Group 10

Soils in this group have one or more characteristics such as soil depth, texture, drainage, channeled phases, available water capacity, slope or salts which severely limit planting, survival or growth of trees and shrubs.

Soils in this group are usually not recommended for farmstead and feedlot windbreaks, field windbreaks, and plantings for recreation and wildlife. However, onsite investigations may reveal that tree and shrub plantings can be made with special treatments (hand planting, scalp planting, specialized site preparation, drainage, or other specialized treatments). The selection of species must be tailored to the soil conditions existing at each site. **Limiting conditions and the specialized treatments required to overcome these limitations must be documented on the planting plan.**