SECTION II

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II – WINDBREAK INTERPRETATIONS

INTRODUCTION

Windbreaks can be a very effective tool against wind erosion and damage to crops and farmsteads, as well as an environmentally sound addition to the landscape. Interpretations for establishing and maintaining windbreaks are found here. This information is published in soil survey map unit descriptions and tables. The National Soil Information System (NASIS) is the repository for this data set.

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WINDBREAK SUITABILITY GROUPS

Windbreak Suitability Group system is a system of standardized classification developed by the NRCS for correlating tree and shrub species adaptation, establishment and height growth to specific edaphic and climatic parameters. Where specific windbreak suitability groups are not available, Conservation Tree/Shrub Suitability Groups (CTSG) are used. CTSG are a guide for selecting species best suited for different kinds of soil and for predicting height growth and effectiveness.

For both systems, each classification unit is defined by a climatic area and a range of soil characteristics. They are normally applied to non-forested agricultural 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 based on the soil type and climate. The interpretation for a unit normally consists of a list of adapted tree and shrub species, their estimated 20-year heights, and other plant attributes that might be needed either regionally or locally in order to be effective windbreaks.

The system is designed to be a flexible system that could be utilized to develop plant materials and establish specifications for wind erosion control and crop protection plantings, living snow fences, wildlife plantings, noise barriers, energy conservation plantings, and protection for farmsteads and feedlots. Additionally, the 20-year heights of the adapted trees and shrubs provide an indication of long term performance.

The system consists of two parts. The first part is based on the combination of individual and partial Major Land Resource Areas. These are geographic areas characterized by particular soil patterns, climate, water resources, land uses, etc. Each grouping represents a single plant hardiness zone for tree and shrub species. The second portion subdivides the soil series and/or phase used in California into soil groupings. Each group has a common name such as loamy, clayey, droughty, etc. and denotes certain soil properties and characteristics that significantly limit species selection or effect the expected height growth.

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WINDBREAK AND ENVIRONMENTAL PLANTING REPORT

In some published soil surveys, information on establishing windbreaks is presented in narrative form in the "Windbreaks and Environmental Plantings" section. Certain tables include information on the height that locally grown trees and shrubs would be expected to reach in 20 years on various soils. See Part 537 of the *National Forestry Manual* for additional information.

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WIND ERODIBILITY GROUPS

Soil surveys also contain information about the susceptibility of various soils to wind erosion. The "Physical and Chemical Properties of the Soils" Table in the published soil survey contains the wind erodibility group for each soil mapping unit. The wind erodibility group (WEG) is defined as a grouping of soils that have similar properties affecting their resistance to soil blowing in cultivated areas. The groups indicate the susceptibility to blowing. The Wind Erodibility Index (I) used in the Wind Erosion Equation, is assigned using the Wind Erodibility Groups (*National Soil Survey Handbook* (1999) Section 618.72).

WEG	Wind Erodibility Index (I) (tons/ac/yr)
1	310 (very fine sands) 250 (fine sands) 220 (fine sands) 180 (medium sands) 160 (coarse sands)
2	134
3	86
4	86
4L	86
5	56
6	48
7	38
8	0

Soil Properties that are most important in determining Wind Erodibility Group are: 1) Surface Soil Texture; 2) Organic Matter Content; 3) Calcium Carbonate Reaction; 4) Coarse Fragment Content; and 5) Aggregate Stability. For more information on the use of the Wind Erodibility Index, see Section II, the subsection on HEL Interpretations.