

United States Department of Agriculture
Natural Resources Conservation Service

03/25/2002

White Sands Missile Range, New Mexico, Parts of Dona Ana, Lincoln, Otero, Sierra and Socorro Counties

Table E1.--Forest Productivity

Map symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site index	Volume of wood fiber cu ft/ac	
Ac:				
Active Dune Land-----	---	---	---	---
AD:				
Anklam-----	---	---	---	---
Aladdin-----	---	---	---	---
BD:				
Berino-----	---	---	---	---
Dona Ana-----	---	---	---	---
Do:				
Deama-----	---	---	---	---
Rock Outcrop-----	---	---	---	---
DP:				
Dona Ana-----	---	---	---	---
Pajarito-----	---	---	---	---
Bluepoint-----	---	---	---	---
Du:				
Dune Land-----	---	---	---	---
Dona Ana-----	---	---	---	---
Bluepoint-----	---	---	---	---
DY:				
Dune Land-----	---	---	---	---
Yesum-----	---	---	---	---
Gr:				
Gilland-----	---	---	---	---
Rock Outcrop-----	---	---	---	---
Gs:				
Gypsum Land-----	---	---	---	---

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Gu: Gypsum Land-----	---	---	---	---
Gv: Gypsum Rock Land-----	---	---	---	---
Tanbark-----	---	---	---	---
InT: Intermittent Lakes-----	---	---	---	---
LA: La Fonda-----	---	---	---	---
La Fonda-----	---	---	---	---
Lf: Lava Flows-----	---	---	---	---
Lr: Lozier-----	---	---	---	---
Rock Outcrop-----	---	---	---	---
MA: Marcial-----	---	---	---	---
Ubar-----	---	---	---	---
Me: Mead-----	---	---	---	---
MG: Mimbres-----	---	---	---	---
Glendale-----	---	---	---	---
NT: Nickel-----	---	---	---	---
Tencee-----	---	---	---	---
OB: Onite-----	---	---	---	---
Bluepoint-----	---	---	---	---
Wink-----	---	---	---	---

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Os: Oscura-----	---	---	---	---
RK: Rockland Cool-----	---	---	---	---
Rubble Land-----	---	---	---	---
Deama-----	---	---	---	---
RL: Rock Land-----	---	---	---	---
Rubble Land-----	---	---	---	---
Lozier-----	---	---	---	---
SH: Rubble Land-----	---	---	---	---
Shale Rock Land-----	---	---	---	---
Deama-----	---	---	---	---
SP: Sonoita-----	---	---	---	---
Pinaleno-----	---	---	---	---
Aladdin-----	---	---	---	---
SR: Sotim-----	---	---	---	---
Russler-----	---	---	---	---
TC: Tencee-----	---	---	---	---
Nickel-----	---	---	---	---
TK: Tencee-----	---	---	---	---
Nickel-----	---	---	---	---

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Ye: Yesum-----	---	---	---	---
YH: Yesum-----	---	---	---	---
Holloman-----	---	---	---	---
Gypsum Land-----	---	---	---	---

Woodland Interpretations

Woodland Ordination Symbol

The ordination symbol has two parts: The class and subclass.

Example: 9A

CLASS	SUBCLASS
9	A

Ordination Class Symbol

Productivity Class. The first element in ordination is a number that denotes potential productivity in terms of cubic meters of wood per hectare per year for an indicator tree species. The larger the number, the greater the potential productivity. Most woodland productivity values have been obtained from conversion of site index data. A mean annual increment of one cubic meter per hectare equals 14.3 cubic feet per acre (For quick conversion a factor of 15 may be used).

Examples:

- 1 means 1 cubic meter per hectare per year (14.3 cu.ft./ac)
- 2 means 2 cubic meters per hectare per year (28.6 cu.ft./ac)
- 10 means 10 cubic meters per hectare per year (143 cu.ft./ac)

Indicator Species. The indicator species is the species that is common in the area and is generally, but not necessarily, the most productive on the soil. It is the species that determines the ordination class. To make comparisons of productivity consult the "Woodland Productivity Table" which lists productivity for all species where data have been collected.

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Continued:

Site Index. Site index is determined by taking height measurements and determining the age of selected trees within stands of a given species. This index is the average height, in feet, that the trees attain in a specified number of years. This index applies to fully stocked, even-aged, unmanaged stands. Site indexes shown in the woodland productivity table are averages based on measurements made at sites that are representative of the soil series and where the site has been free of past fire and disturbances. When comparing site index and woodland productivity of different soils, the values for the same tree species should be compared.

Ordination Subclass Symbol

The second element or subclass is indicated by a capital letter, which indicates certain soil or physiographic characteristics that contribute to important hazards or limitations in management. These are listed and defined on the following page.

Ordination Subclass Definitions and Implications

Subclass R (relief or slope steepness).

Soils that have restrictions or limitations for forestland use or management because of steepness of slope.

Subclass X (stoniness or rockiness).

Soils that have restrictions or limitations for forest land use or management because of stones or rocks.

Subclass W (excessive wetness).

Soils in which excessive water, either seasonally or year round, causes significant limitations for forestland use and management. These soils may have restricted drainage, a high water table, or flooding hazard that adversely affects either stand development or management.

Subclass T (toxic substances).

Soils that have within the root zone excessive alkalinity, acidity, sodium salts, or other toxic substances that limit or impede development of desirable species.

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Continued:

Subclass D (restricted rooting depth).

Soils that have restrictions or limitations for forest land use and management because of the rooting depth. For example, soils that are underlain by hard rock, hardpan, or other layers in the soil that restrict roots.

Subclass C (clayey soils).

Soils that have restrictions or limitations for forestland use or management because of the kind or amount of clay in the upper part of the soil profile.

Subclass S (sandy soils).

Dry, sandy soils that impose equipment limitations, have low moisture holding capacity, and normally are low in available plant nutrients.

Subclass F (fragmental or skeletal soils).

Soils that have restrictions or limitations for forest land or management because they contain large amounts of rock fragments that are larger than 2 mm and smaller than 10 inches. This subclass includes flaggy soils.

Subclass A (no limitations or slight limitations).

Soils that have no significant restrictions or limitations for forest land use or management.

Multiple Limitations

Some soils may have more than one limiting characteristic, but only one symbol will be used. Priority in placing each kind of soil into a subclass must be in the order in which the subclass characteristics are listed above. Plant competition and special considerations are not to be used to determine subclass.

Woodland Management and Productivity

This table presents information about management and productivity for each map unit in the survey area, which is suitable for producing timber. Management concerns, which are covered, include hazard of erosion, equipment use, seedling mortality, and windthrow hazard. Ratings of SLIGHT, MODERATE, or SEVERE are used to indicate the degree of major soil limitations. Information on potential productivity includes plant competition, common trees, site index, productivity class, and trees to plant.

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Continued:

Management Concerns

Erosion Hazard. The risk of erosion is slight if the expected soil loss is small; moderate if some measures are needed to control erosion during logging; and severe if intensive management or special equipment and methods are needed to prevent excessive loss of soil.

Equipment Limitation. A rating of slight indicates that use of equipment is not limited to a particular kind of equipment or time of year; moderate indicates a short seasonal limitation, or a need for some modification in management of equipment; and severe indicates a seasonal limitation, a need for special equipment or management, or a hazard in the use of equipment.

Seedling Mortality. The ratings are for seedlings from a good planting stock that are properly planted during a period of sufficient rainfall. A rating of slight indicates that the expected mortality of the planted seedlings is less than 25 percent; moderate - 25 to 50 percent; and severe - more than 50 percent.

Windthrow Hazard. A rating of slight indicates that trees in wooded areas are not expected to be blown down by commonly occurring winds; moderate - that some trees are blown down during periods of excessive soil wetness and strong winds; and severe - that many trees are blown down during periods of excessive soil wetness and moderate or strong winds.

Potential Productivity

Plant Competition. A rating of slight indicates little or no competition from other plants; moderate indicates that plant competition is expected to hinder the development of the fully stocked stand of desirable trees; and severe means that plant competition is expected to prevent the establishment of a desirable stand unless the site is intensively prepared, weeded, or otherwise managed for the control of undesirable plants.

Common Trees. Trees that generally occur on the soil are listed regardless of economic importance.

Site Index and Productivity Class. These are discussed under ordination class symbol.

Trees to Plant. Trees that are suitable for commercial wood production and that are adapted to the soil.

See the National Forestry Manual, Subpart B for criteria used in rating management concerns.