

## Forestland Interpretations

Forestland interpretations are important to good management. The management of trees begins with an understanding of the soil where they grow or are to be grown. Some soils are very suitable for growing wood crops; others barely support tree cover. Different tree species may vary in production on the same soil.

Forestland interpretations should be used to assist land users in planning, installing, and maintaining forestland management systems.

### *Forest Management and Productivity*

The Forestland Management and Productivity tables presents information about suitable for producing timber for each soil map unit. Management concerns, which include hand planting, mechanical planting, use of harvesting equipment, mechanical site preparation (surface), roads (natural surface), erosion on roads and trails, off-road/trail erosion, soil rutting, log landings, seedling survival, are listed by ratings of:

- Not Limited (0.00)
- Slightly Limited (0.01 to 0.30)
- Moderately Limited (0.31 to 0.60)
- Limited (0.61 to 0.99)
- Very Limited (1.00)

Information on potential productivity includes plant competition, common trees, site index, productivity class, and trees to plant.

### *Management Concerns*

**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.

**POTENTIAL PRODUCTIVITY** - This is discussed under the ordination class symbol.

**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.

**HAND PLANTING** – ratings are based on slope, depth to a restrictive layer, content of sand, plasticity index, rock fragments on or below the surface, a water table, and ponding. Ratings indicate the expected difficulty of hand planting, which includes the proper placement of root systems of tree seedlings to a depth of up to 12 inches, using standard hand planting tools. It is assumed that necessary site preparation is completed before seedlings are planted.

**MECHANICAL PLANTING** – ratings are based on slope, depth to a restrictive layer, content of sand, plasticity index, rock fragments on or below the surface, a water table, and ponding. Ratings indicate the expected difficulty using a mechanical planter, which includes proper placement of root systems of tree seedlings to a depth up to 12 inches. It is assumed that necessary site preparation is completed before seedlings are planted.

**USE OF HARVEST EQUIPMENT** – ratings are based on slope, rock fragments on the surface, plasticity index, content of sand, surface texture, a water table, and ponding. Ratings indicate the suitability for operating harvest equipment for off-road transport or harvest of logs and/or wood products by ground-based wheeled or tracked equipment.

**MECHANICAL SITE PREPARATION (SURFACE)** – ratings are based on slope, depth to a restrictive layer, plasticity index, rock fragments on or below the surface, a water table, and ponding. The part of the soil from the surface to a depth of about 12 inches is considered in the ratings. Ratings indicate the suitability of using surface-altering soil tillage equipment to prepare the site for planting or seeding.

**ROADS (NATURAL SURFACE)** – ratings are based on slope, rock fragments on the surface, plasticity index, content of sand, surface texture, a water table, ponding, flooding, and the hazard of soil slippage. The ratings indicate the suitability for using the natural surface of the soil for roads on which trucks transport logs and other wood products from the site.

**EROSION (ROAD/TRAIL)** – ratings are based on the soil erodibility factor K, slope, and content of rock fragments. The ratings apply to unsurfaced roads and trails.

**EROSION (OFF-ROAD/OFF-TRAIL)** – ratings are based on slope and on soil erodibility factor K. The soil loss is caused by sheet or rill erosion in off-road or off-trail areas where 50 to 75 percent of the surface has been exposed by logging, grazing, mining, or other kinds of disturbance.

**SOIL RUTTING** – ratings are based on a water table, rock fragments on or below the surface, surface texture, depth to a restrictive layer, and slope. Ratings indicate the hazard or risk of ruts in the uppermost soil surface layers by operation of forest equipment. Soil displacement and puddling (soil deformation and compaction) may occur simultaneously with rutting.

**LOG LANDINGS** – ratings are based on slope, rock fragments on the surface, plasticity index, content of sand, surface texture, a water table, ponding, flooding, and the hazard of soil slippage. Ratings indicate the suitability of the soil at the forest site to serve as a log landing and allows the efficient and effective use of equipment for the temporary storage and handling of logs.

**SEEDLING SURVIVAL** – ratings are based on flooding, ponding, a water table, content of lime, reaction, salinity, available water capacity, soil moisture regime, soil temperature regime, aspect, and slope. Ratings indicate the impact of soil, physiographic, and climatic conditions on the survivability of newly established tree seedlings.

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

*This subsection includes:*

- **(a) Forest Management (one or two tables)**

Clay and Ray Counties, Missouri  
 Forest Productivity

Map symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site index	Volume of wood fiber cu ft/ac	
1B: SIBLEY-----	---	---	---	---
1C: SIBLEY-----	---	---	---	---
2C: HIGGINSVILLE-----	---	---	---	---
5C: MACKSBURG-----	---	---	---	---
6B: SHARPSBURG-----	---	---	---	---
6C2: SHARPSBURG-----	---	---	---	---
6D2: SHARPSBURG-----	---	---	---	---
8: PITS-----	---	---	---	---
9D: SNEAD-----	northern red oak----	64	43	black oak, eastern redcedar, northern red oak
	sugar maple-----	---	0	
	white ash-----	63	57	
	white oak-----	48	29	

Clay and Ray Counties, Missouri  
 Forest Productivity

Map symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site index	Volume of wood fiber	
			cu ft/ac	
9E:				
SNEAD-----	northern red oak----	64	43	black oak, eastern redcedar, northern red oak
	sugar maple-----	---	0	
	white ash-----	63	57	
	white oak-----	48	29	
10D:				
SNEAD-----	northern red oak----	64	43	---
	white ash-----	56	29	
	white oak-----	55	43	
ROCK OUTCROP-----	---	---	---	---
10F:				
SNEAD-----	northern red oak----	64	43	---
	white ash-----	56	29	
	white oak-----	55	43	
ROCK OUTCROP-----	---	---	---	---
11C2:				
GREENTON-----	---	---	---	---
11C3:				
GREENTON-----	---	---	---	---
11D3:				
GREENTON-----	---	---	---	---
13B:				
SAMPSEL-----	---	---	---	---

Clay and Ray Counties, Missouri  
 Forest Productivity

Map symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site index	Volume of wood fiber	
			cu ft/ac	
13C: SAMPSEL-----	---	---	---	---
24B: LAGONDA-----	---	---	---	---
25C2: LAGONDA-----	---	---	---	---
25D2: LAGONDA-----	---	---	---	---
26B: LADOGA-----	northern red oak---- white oak-----	75 75	57 57	black walnut, eastern white pine, European larch, northern red oak, red pine, sugar maple, white oak
26C2: LADOGA-----	northern red oak---- white oak-----	75 75	57 57	black walnut, eastern white pine, European larch, northern red oak, red pine, sugar maple, white oak

Clay and Ray Counties, Missouri  
 Forest Productivity

Map symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site index	Volume of wood fiber	
			cu ft/ac	
26D2: LADOGA-----	northern red oak---- white oak-----	75 75	57 57	black walnut, eastern white pine, European larch, northern red oak, red pine, sugar maple, white oak
27D3: LADOGA-----	northern red oak---- white oak-----	75 75	57 57	black walnut, eastern white pine, European larch, northern red oak, red pine, sugar maple, white oak
31: COLO-----	---	---	---	---
33: ZOOK-----	---	---	---	---
35: BOOKER-----	eastern cottonwood-- silver maple-----	85 80	86 29	eastern cottonwood, green ash, pecan, pin oak, silver maple

Clay and Ray Counties, Missouri  
 Forest Productivity

Map symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site index	Volume of wood fiber	
			cu ft/ac	
36: BREMER-----	eastern cottonwood-- silver maple-----	90 80	100 29	American sycamore, common hackberry, eastern arborvitae, eastern cottonwood, green ash, silver maple
37: MONITEAU-----	pin oak-----	70	57	black willow, eastern cottonwood, green ash, pin oak, silver maple, sweetgum, white oak, willow oak
38: WIOTA-----	---	---	---	---
39: NODAWAY-----	white oak-----	65	43	black walnut, eastern white pine, European larch, red pine, sugar maple

Clay and Ray Counties, Missouri  
 Forest Productivity

Map symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site index	Volume of wood fiber	
41C2: ARMSTER-----	pin oak-----	70	57	black oak, green ash, northern red oak, pin oak, white oak
41D2: ARMSTER-----	pin oak-----	70	57	black oak, green ash, northern red oak, pin oak, white oak
42C3: ARMSTER-----	pin oak-----	70	57	black oak, green ash, northern red oak, pin oak, white oak
42E3: ARMSTER-----	pin oak-----	70	57	black oak, green ash, northern red oak, pin oak, white oak
54C2: KNOX-----	northern red oak---- white oak-----	78 69	57 57	black walnut, eastern white pine, green ash, tuliptree

Clay and Ray Counties, Missouri  
 Forest Productivity

Map symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site index	Volume of wood fiber	
			cu ft/ac	
54E2: KNOX-----	northern red oak---- white oak-----	78 69	57 57	black walnut, eastern white pine, green ash, tuliptree
54F: KNOX-----	northern red oak---- white oak-----	78 69	57 57	black walnut, eastern white pine, green ash, tuliptree
55D3: KNOX-----	northern red oak---- white oak-----	78 69	57 57	black walnut, eastern white pine, green ash, tuliptree
56B: GRUNDY-----	---	---	---	---
57C2: GRUNDY-----	---	---	---	---
61C: KNOX-----	northern red oak---- white oak-----	78 69	57 57	black walnut, eastern white pine, green ash, tuliptree
URBAN LAND-----	---	---	---	---

Clay and Ray Counties, Missouri  
 Forest Productivity

Map symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site index	Volume of wood fiber	
			cu ft/ac	
61D: KNOX-----	northern red oak---- white oak-----	78 69	57 57	black walnut, eastern white pine, green ash, tuliptree
URBAN LAND-----	---	---	---	---
61E: KNOX-----	northern red oak---- white oak-----	78 69	57 57	black walnut, eastern white pine, green ash, tuliptree
URBAN LAND-----	---	---	---	---
68C: URBAN LAND-----	---	---	---	---
69A: URBAN LAND-----	---	---	---	---
70B: SHARPSBURG-----	---	---	---	---
URBAN LAND-----	---	---	---	---
70C: SHARPSBURG-----	---	---	---	---
URBAN LAND-----	---	---	---	---

Clay and Ray Counties, Missouri  
 Forest Productivity

Map symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site index	Volume of wood fiber	
			cu ft/ac	
70D: SHARPSBURG-----	---	---	---	---
URBAN LAND-----	---	---	---	---
71: AHOLT-----	eastern cottonwood-- pin oak-----	90 80	100 57	eastern cottonwood, green ash, pin oak
72: DOCKERY-----	pin oak-----	76	57	eastern cottonwood, pecan, pin oak
73: LETA-----	black willow----- eastern cottonwood--	--- 90	0 100	eastern cottonwood, green ash, pecan, silver maple, sweetgum
74: LEVASY-----	black willow----- eastern cottonwood--	--- 90	0 100	eastern cottonwood, pecan
75: NORBORNE-----	pecan----- pin oak-----	75 90	0 72	eastern cottonwood, green ash, pecan, pin oak, tuliptree
78: MYRICK-----	eastern cottonwood-- pin oak-----	85 75	86 57	eastern cottonwood, pin oak, sweetgum

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Map symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site index	Volume of wood fiber	
			cu ft/ac	
80: LANDES-----	American sycamore--- eastern cottonwood-- green ash----- sweetgum----- tuliptree-----	--- 105 --- --- 95	0 143 0 0 100	American sycamore, black walnut, eastern cottonwood, eastern white pine, green ash, sugar maple, sweetgum, tuliptree
81: WALDRON-----	eastern cottonwood-- pin oak-----	110 80	157 57	black willow, eastern cottonwood, green ash, pecan, pin oak, silver maple, sweetgum
82: PARKVILLE-----	eastern cottonwood-- pin oak-----	100 90	129 72	American sycamore, eastern cottonwood, pecan, pin oak, sweetgum
83: HAYNIE-----	American sycamore--- black walnut----- eastern cottonwood-- green ash-----	110 --- 110 ---	157 0 157 0	black walnut, eastern cottonwood

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Map symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site index	Volume of wood fiber	
87: MODALE-----	---	---	---	---
88: GILLIAM-----	eastern cottonwood-- pin oak-----	95 80	114 57	eastern cottonwood, pecan, pin oak
89: SARPY-----	eastern cottonwood--	95	114	American sycamore, eastern cottonwood, silver maple
90: WABASH-----	pin oak-----	75	57	eastern cottonwood, pecan, pin oak
92: COTTER-----	eastern cottonwood-- tuliptree-----	100 90	129 86	black walnut, eastern cottonwood, tuliptree
AED: -----	---	---	---	---

cu ft/ac

Clay and Ray Counties, Missouri  
 Forest Productivity

Map symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site index	Volume of wood fiber cu ft/ac	
M-W: WATER-----	---	---	---	---
W: WATER-----	---	---	---	---