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THE
DISTRIBUTION OF IMPORTANT FOREST TREES
OF THE UNITED STATES

BY

E. N. MUNNS

*Chief, Division of Forest Influences
Forest Service*

UNITED STATES DEPARTMENT OF AGRICULTURE

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THE DISTRIBUTION OF IMPORTANT FOREST TREES OF THE
UNITED STATESBy E. N. MUNNS, *Chief, Division of Forest Influences,¹ Forest Service*

INTRODUCTION

Information on the range and distribution of forest trees has far-reaching practical usefulness in addition to its value to botanists, naturalists, teachers, and others whose work or interests are with trees. It is a valuable tool for the forester, the lumberman, and the manufacturer in search of raw materials. It is an essential element in erosion and flood control operations, and in land-use planning. Indeed, present trends toward better planning and integration of land use are directing increased attention to forest cover, the species represented in it, and the possibilities of enlarging the contribution of forest land to community welfare. In some cases the occurrence of certain species in a region may assume major importance in such planning. It is the purpose of this publication to make readily accessible the information available in the Forest Service on the distribution of important forest trees.

The Forest Service, for over 30 years, has been actively gathering data on the species of trees present in the United States and the extent of their occurrence. More than 20 years ago distribution maps were published for American pines, and as a result much new information on these and other forest-tree species has been obtained. Much of this information has been presented in condensed form in United States Department of Agriculture Miscellaneous Circular 92, Check List of the Forest Trees of the United States, Their Names and Ranges. There has

been a strong demand, however, to have this material available on maps because of the greater accuracy, simplicity, and detail possible in this form of presentation. Even the most detailed published descriptions of species distribution are found to be too broadly generalized when an attempt is made to plot the ranges on maps. A mere listing of known points of occurrence would be even less satisfactory.

The maps do not, however, carry any implication as to the density, continuity of occurrence, or commercial quality and quantity of the various species. Lumbering, fire, and agricultural development in many parts of the United States have markedly affected the original forest. Although in some instances they may have caused an extension of the range of some species, their influence is usually in the opposite direction, and in extreme cases, such as in portions of the Lake States and the South, they have eliminated formerly abundant species from fairly large areas. It is, however, impractical to show such locally depleted areas on maps of the scale used.

No attempt has been made to show the commercial range of important timber tree species, since changing demands, practices, and standards in utilization would make such information out of date in a comparatively short time.

So many sources of information, published and unpublished, have been drawn upon in the preparation of the maps that individual reference and acknowledgment is not feasible. The sources include taxonomic and botanical handbooks, ecological papers, and occurrence

¹ The maps here presented have been based very largely upon data collected by the late George B. Sudworth, dendrologist of the Forest Service until his death in 1927. Since his death this work has been carried on as an activity of the Division of Silvics. Many of the more recent data have been compiled by William W. Mitchell, junior forester.

notes by botanists, foresters, biologists, and other workers. However, since not all of the unpublished notes have been supported by authenticated herbarium specimens, an effort has been made to include only reports of qualified observers.

Nomenclature of the species, both scientific and common names, and the order of arrangement, follow the Check List. Since the issuance of that publication in 1927, certain minor revisions in the standard nomenclature have been adopted by the Forest Service. These have been incorporated in the present publication along with other minor corrections listed below.

CHECK LIST

CORRECTION

<i>Pinus monticola</i> D. Don.	<i>Pinus monticola</i> Douglas.
<i>Pinus balfouriana</i> Murray.	<i>Pinus balfouriana</i> A. Murray.
<i>Pinus resinosa</i> Solander.	<i>Pinus resinosa</i> Aiton.
<i>Pinus ponderosa</i> Lawson.	<i>Pinus ponderosa</i> Douglas.
<i>Pinus jeffreyi</i> "Oreg. Com."	<i>Pinus jeffreyi</i> Greville and Balfour.
<i>Pinus contorta</i> Loudon.	<i>Pinus contorta</i> Douglas.
<i>Picea engelmannii</i> Engelman.	<i>Picea engelmanni</i> (Parry) Engelman.
<i>Pseudotsuga taxifolia</i> (La Marck) Britton.	<i>Pseudotsuga taxifolia</i> (Lambert) Britton.

CHECK LIST—continued

CORRECTION—continued

<i>Abies concolor</i> Lindley and Gordon.	<i>Abies concolor</i> Lindley.
<i>Abies amabilis</i> (Loudon) Forbes.	<i>Abies amabilis</i> (Douglas) Forbes.
<i>Chamaecyparis nootkatensis</i> (Lambert) Sudworth.	<i>Chamaecyparis nootkatensis</i> (Lambert) Spach.
<i>Populus trichocarpa</i> Hooker.	<i>Populus trichocarpa</i> Torrey and Gray.
<i>Ostrya virginiana</i> (Miller) Koch.	<i>Ostrya virginiana</i> (Miller) K. Koch.
<i>Betula lutea</i> Michaux.	<i>Betula lutea</i> Michaux filius.
<i>Betula populifolia</i> Marsh.	<i>Betula populifolia</i> Marshall.
<i>Gymnocladus dioicus</i> (Linnaeus) Koch.	<i>Gymnocladus dioicus</i> (Linnaeus) K. Koch.
<i>Acer nigrum</i> F. A. Michaux.	<i>Acer nigrum</i> Michaux filius.

Although collection of data has continued for many years, the records are still incomplete. One of the objectives of the present publication, therefore, is to stimulate interest in the accumulation of more accurate information on the distribution of our North American trees. The Forest Service will welcome data indicating the need for changes on the present maps. Location data should be as specific as possible to facilitate plotting, and occurrence should be substantiated by herbarium specimens when their collection is practicable.

TREE DISTRIBUTION MAPS

	Map no.		Map no.
<i>Pinus strobus</i> Linnaeus, northern white pine.....	1	<i>Chamaecyparis thyoides</i> (Linnaeus) Britton, Sterns, and Poggenberg, southern white cedar.....	55
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<i>Pinus contorta</i> Douglas, lodgepole pine.....	15	<i>Hicoria glabra</i> (Miller) Sweet, pignut hickory.....	69
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<i>Pinus rigida</i> Miller, pitch pine.....	19	<i>Populus balsamifera</i> Linnaeus, balsam poplar.....	73
<i>Pinus rigida serotina</i> (Michaux) Loudon, pond pine.....	20	<i>Populus trichocarpa</i> Torrey and Gray, black cottonwood.....	74
<i>Pinus virginiana</i> Miller, Virginia pine.....	21	<i>Populus deltoides</i> Marshall, eastern cottonwood.....	75
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<i>Pinus caribaea</i> Morelet, slash pine.....	26	<i>Ostrya virginiana</i> (Miller) K. Koch, hophornbeam.....	80
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<i>Larix occidentalis</i> Nuttall, western larch.....	28	<i>Betula lutea</i> Michaux filius, yellow birch.....	82
<i>Picea mariana</i> (Miller) Britton, Sterns, and Poggenberg, black spruce.....	29	<i>Betula nigra</i> Linnaeus, river birch.....	83
<i>Picea rubra</i> Link, ² red spruce.....	30	<i>Betula populifolia</i> Marshall, gray birch.....	84
<i>Picea glauca</i> (Moench) Voss, white spruce.....	31	<i>Betula papyrifera</i> Marshall, paper birch.....	85
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<i>Abies arizonica</i> Merriam, corkbark fir.....	42	<i>Quercus ellipsoidalis</i> E. J. Hill, jack oak.....	96
<i>Abies grandis</i> Lindley, lowland white fir.....	43	<i>Quercus coccinea</i> Muenchhausen } scarlet oak.....	97
<i>Abies concolor</i> Lindley, white fir.....	44	<i>Quercus coccinea tuberculata</i> Sargent } black oak.....	98
<i>Abies amabilis</i> (Douglas) Forbes, silver fir.....	45	<i>Quercus velutina</i> La Mark } black oak.....	99
<i>Abies nobilis</i> Lindley, noble fir.....	46	<i>Quercus velutina missouriensis</i> Sargent } black oak.....	100
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<i>Thuja plicata</i> D. Don, western red cedar.....	54		

² Although this name has been adopted in the Check List many well-qualified taxonomists prefer *Picea rubens* Sargent.

³ Although this name has been adopted in the Check List many well-qualified taxonomists prefer *Pseudotsuga mucronata* (Rafinesque) Sudworth.

⁴ Although this name has been adopted in the Check List many well-qualified taxonomists prefer *Alnus oregona* Nuttall.

	Map no.		Map no.
<i>Quercus nigra</i> Linnaeus, water oak	103	<i>Prunus pennsylvanica</i> Linnaeus filius, pin cherry	136
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× <i>Quercus heterophylla</i> Michaux filius, Bartram oak	104	<i>Prunus serotina</i> Ehrhart, black cherry	138
<i>Quercus laurifolia</i> Michaux, laurel oak	105	<i>Cercis canadensis</i> Linnaeus, redbud	139
<i>Quercus imbricaria</i> Michaux, shingle oak	106	<i>Cercis occidentalis</i> Torrey, California redbud	140
<i>Quercus chrysolepis</i> Liebmann, canyon live oak	107	<i>Gymnocladus dioica</i> (Linnaeus) K. Koch, coffeetree	141
<i>Quercus virginiana</i> Miller, live oak	108	<i>Gleditsia triacanthos</i> Linnaeus, honeylocust	142
<i>Quercus douglasii</i> Hooker and Arnott, California blue oak	109	<i>Robinia pseudoacacia</i> Linnaeus, black locust	143
<i>Quercus alba</i> Linnaeus, white oak	110	<i>Ptelea trifoliata</i> Linnaeus, hoptree	144
<i>Quercus lobata</i> Née, valley white oak	111	<i>Ilex opaca</i> Aiton, holly	145
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<i>Celtis occidentalis</i> Linnaeus, hackberry	121	<i>Rhamnus purshiana</i> de Candolle, cascara	155
<i>Celtis laevigata</i> Willdenow, sugarberry	122	<i>Tilia glabra</i> Ventenat, basswood	156
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<i>Magnolia virginiana</i> Linnaeus, sweetbay	125	<i>Cornus florida</i> Linnaeus, dogwood	159
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<i>Liquidambar styraciflua</i> Linnaeus, red gum	131	<i>Fraxinus americana</i> Linnaeus, white ash	165
<i>Platanus occidentalis</i> Linnaeus, sycamore	132	<i>Fraxinus biltmoreana</i> Beadle, Biltmore white ash	166
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		<i>Catalpa speciosa</i> Warder, hardy catalpa	170

PINUS MONOPHYLLA TORREY AND FREMONT

MAP 9

SINGLELEAF PIÑON

MAP 12

PINUS RESINOSA AITON

RED PINE

PINUS RIGIDA SEROTINA (MICHAUX) LOUDON

MAP 20

POND PINE

VIRGINIA PINE

MAP 21

PINUS VIRGINIANA MILLER

SPRUCE PINE

MAP 23

PINUS GLABRA WALTER

LONGLEAF PINE

MAP 25

PINUS PALUSTRIS MILLER

MAP 29

PICEA MARIANA (MILLER) BRITTON, STERN, AND FOGGENBERG

BLACK SPRUCE

WHITE SPRUCE

MAP 31

PICEA GLAUCA (MOENCH) VOSS

PICEA-PUNGENS ENGELMANN

MAP 33

BLUE SPRUCE

EASTERN HEMLOCK

Map 35

TSUGA CANADENSIS (LINNAEUS) CARRIÈRE

MAP 40

ABIES BALSAMEA (LINNAEUS) MILLER

BALSAM FIR

ABIES CONCOLOR LINDLEY

MAP 44

WHITE FIR

SOUTHERN CYPRESS

MAP 51

TAXODIUM DISTICHUM (LINNAEUS) RICHARD

NORTHERN WHITE CEDAR

MAP 53

THUJA OCCIDENTALIS LINNÆUS

MAP 55

CHAMAECYPARIS THYOIDES (LINNAEUS) BRITTON, STERN, AND POGGENBERG

SOUTHERN WHITE CEDAR

MAP 57

CHAMAECYPARIS LAWSONIANA (A. MURRAY) PARLATORE

PORT ORFORD CEDAR

EASTERN RED CEDAR

MAP 59

JUNIPERUS VIRGINIANA LINNAEUS

MAP 61

JUGLANS CINEREA LINNAEUS

BUTTERNUT

MAP 62

X JUGLANS QUADRANGULATA REHDER
 JUGLANS NIGRA LINNAEUS

BLACK WALNUT

SHAGBARK HICKORY

HICORIA OVATA (MILLER) BRITTON

BIGLEAF SHAGBARK HICKORY

Hicoria laciniosa

100 0 200
MILES

MAP 67

HICORIA ALBA (LINNAEUS) BRITTON

MOCKERNUT HICKORY

POPULUS TREMULOIDES MICHAUX

MAP 69

ASPEN

(Distribution of aspen is shown as one species, although dendrologists separate *Populus tremuloides* Michaux from *Populus tremuloides aurea* (Tidestrom) Daniels, the latter extending westward from Saskatchewan to the valley of the Yukon River and southward in the western part of the United States and Mexico.)

MAP 71

POPULUS HETEROPHYLLA LINNAEUS

SWAMP COTTONWOOD

POPULUS BALSAMIFERA LINNAEUS

MAP 72

BALSAM POPLAR

POPULUS TRICHOCARPA TORREY AND GRAY

MAP 73

BLACK COTTONWOOD

(Distribution of black cottonwood is shown as one species, although dendrologists separate black cottonwood (*Populus trichocarpa* Torrey and Gray) from the northern black cottonwood (*Populus trichocarpa hastata* Henry), the latter extending northward from the California line and into Nevada.)

MAP 75

POPULUS DELTOIDES VIRGINIANA (CASTIGLIONI) SUDWORTH

SOUTHERN COTTONWOOD

MAP 77

SALIX AMYGDALOIDES ANDERSSON

PEACHLEAF WILLOW

MAP 79

OSTRYA VIRGINIANA (MILLER) K. KOCH

HOPHORNBEAM

BETULA LUTEA MICHAUX FILIUS

MAP 81

YELLOW BIRCH

BETULA NIGRA LINNAEUS

MAP 82

RIVER BIRCH

GRAY BIRCH

MAP 83

BETULA POPULIFOLIA MARSHALL

BETULA PAPYRIFERA MARSHALL

MAP 84.

PAPER BIRCH

BEECH

MAP 87

FAGUS GRANDIFOLIA EHRHART

CHESTNUT

MAP 89

CASTANEA DENTATA (MARSHALL) BORKHAUSEN

MAP 90

RED OAK

MAP 91

QUERCUS BOREALIS MICHAUX FILIUS

QUERCUS BOREALIS MAXIMA (MARSHALL) ASHE

MAP 92

RED OAK

SHUMARD RED OAK

MAP 94

QUERCUS SHUMARDII BUCKLEY

MAP 96

QUERCUS COCCINEA MUENCHHAUSEN
 QUERCUS COCCINEA TUBERCULATA SARGENT

SCARLET OAK
 SCARLET OAK

QUERCUS VELUTINA LA MARCK
QUERCUS VELUTINA MISSOURIENSIS SARGENT

MAP 97

BLACK OAK
BLACK OAK

QUERCUS ILICIFOLIA WANGENHEIM

MAP 99

BEAR OAK

MAP 100

QUERCUS RUBRA LINNAEUS

SWAMP RED OAK

MAP 101

QUERCUS RUBRA PAGODAEFOLIA (ELLIOTT) ASHE

BLACKJACK OAK
BLACKJACK OAK
BLACKJACK OAK

MAP 102

QUERCUS MARILANDICA MUENCHHAUSEN
QUERCUS MARILANDICA ASHEI SUDWORTH

WATER OAK

MAP 103

QUERCUS NIGRA LINNAEUS

Map 104

QUERCUS PHELLOS LINNAEUS
X QUERCUS HETEROPHYLLA MICHAUX FILIUS

WILLOW OAK
BARTRAM OAK

LAUREL OAK

MAP 105

QUERCUS LAURIFOLIA MICHAUX

MAP 108

QUERCUS VIRGINIANA MILLER

LIVE OAK

QUEROUS STELLATA WANGENHEIM

MAP 114

POST OAK

BUR OAK

MAP 115

QUERCUS MACROCARPA MICHAUX

SWAMP CHESTNUT OAK

MAP 117

QUERCUS PRINUS LINNAEUS

CHINQUAPIN OAK

MAP 119

QUERCUS MUEHLENBERGII ENGELMANN

MAP 121

CELTIS OCCIDENTALIS LINNAEUS

HACKBERRY

SUGARBERRY

Map 122

CELTIS LAEVIGATA WILLDENOW

MAP 123

MORUS RUBRA LINNAEUS

RED MULBERRY

Map 126

MAGNOLIA ACUMINATA LINNAEUS

CUCUMBER MAGNOLIA

YELLOW POPLAR
Liriodendron tulipifera

MILES
 100 0 200

LIRIODENDRON TULIPIFERA LINNAEUS

Map 127

YELLOW POPLAR

Map 128

SASSAFRAS VARIIFOLIUM (SALISBURY) KUNTZE

MAP 129

SASSAFRAS

WITCH-HAZEL

MAP 130

HAMAMELIS VIRGINIANA LINNAEUS

SERVICEBERRY

MAP 133

AMELANCHIER CANADENSIS (LINNAEUS) MEDICUS

MAP 135

PRUNUS AMERICANA MARSHALL

WILD PLUM

Map 136

PRUNUS PENNSYLVANICA LINNAEUS FILIUS

PIN CHERRY

CHOKECHERRY

MAP 137

PRUNUS VIRGINIANA LINNAEUS

GLEDITSIA TRIACANTHOS LINNAEUS

MAP 142

HONEYLOOUST

HOPTREE

MAP 144

PTELEA TRIFOLIATA LINNAEUS

HOLLY

MAP 145

ILEX OPACA AITON

BLACK MAPLE

MAP 149

ACER NIGRUM MICHAUX FILIUS

SILVER MAPLE

Map 150

ACER SACCHARINUM LINNAEUS

RED MAPLE

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