

One x One Degree
Climate Change Atlas Tree Species

USDA Forest Service
Northern Research Station
Landscape Change Research Group
Iverson, Peters, Prasad, Matthews

Current and Potential Future Habitat, Capability, and Migration

Common Name	Scientific Name	Range	MR	%Cell	FIAsum	FIAiv	ChngCl45	ChngCl85	Adap	Abund	Capabil45	Capabil85	SHIFT45	SHIFT85	SSO	N
red maple	Acer rubrum	WDH	High	68.2	676.1	11.7	Lg. dec.	Lg. dec.	High	Abundant	Good	Good			1	1
sugar maple	Acer saccharum	WDH	High	82.1	593.8	12.5	Sm. dec.	Sm. dec.	High	Abundant	Good	Good			1	2
black cherry	Prunus serotina	WDL	Medium	77.3	548.1	10.1	Sm. dec.	Lg. dec.	Low	Abundant	Fair	Poor			0	3
white ash	Fraxinus americana	WDL	Medium	73	463.5	11.1	Sm. dec.	Sm. dec.	Low	Common	Poor	Poor			0	4
American elm	Ulmus americana	WDH	Medium	80.7	251.2	4.8	No change	Sm. inc.	Medium	Common	Fair	Good			1	5
black walnut	Juglans nigra	WDH	Low	42.7	167.8	6.0	Sm. inc.	Sm. inc.	Medium	Common	Good	Good			1	6
yellow-poplar	Liriodendron tulipifera	WDH	High	25.9	165.4	6.6	Sm. inc.	No change	High	Common	Very Good	Good			1	7
green ash	Fraxinus pennsylvanica	WSH	Low	42.9	145.0	4.1	No change	Sm. inc.	Medium	Common	Fair	Good			1	8
American beech	Fagus grandifolia	WDH	High	45.3	138.1	4.5	No change	Sm. dec.	Medium	Common	Fair	Poor			1	9
black willow	Salix nigra	NSH	Low	3	135.8	27.5	Lg. dec.	Sm. dec.	Low	Common	Very Poor	Poor		Infill +	0	10
black locust	Robinia pseudoacacia	NDH	Low	30.2	120.9	6.5	No change	Sm. inc.	Medium	Common	Fair	Good			1	11
northern red oak	Quercus rubra	WDH	Medium	44.9	119.7	3.9	Sm. inc.	Sm. inc.	High	Common	Very Good	Very Good			1	12
black oak	Quercus velutina	WDH	High	31.6	108.5	4.0	Sm. inc.	Lg. inc.	Medium	Common	Good	Very Good			1	13
white oak	Quercus alba	WDH	Medium	33.3	108.0	4.6	Lg. inc.	Lg. inc.	High	Common	Very Good	Very Good			1	14
silver maple	Acer saccharinum	NSH	Low	16.7	102.9	6.0	Sm. dec.	Sm. dec.	High	Common	Fair	Fair			1	15
slippery elm	Ulmus rubra	WSL	Low	48.3	101.8	4.4	No change	No change	Medium	Common	Fair	Fair			1	16
bitternut hickory	Carya cordiformis	WSL	Low	40	93.9	3.1	Sm. inc.	Sm. inc.	High	Common	Very Good	Very Good			1	17
sassafras	Sassafras albidum	WSL	Low	20.4	90.7	5.0	Sm. inc.	No change	Medium	Common	Good	Fair			1	18
sycamore	Platanus occidentalis	NSL	Low	13.2	86.4	4.5	Sm. inc.	Sm. inc.	Medium	Common	Good	Good			1	19
shagbark hickory	Carya ovata	WSL	Medium	46.9	84.8	3.9	Sm. inc.	Sm. inc.	Medium	Common	Good	Good			1	20
eastern hophornbeam; ironw	Ostrya virginiana	WSL	Low	28.7	75.5	3.3	Lg. dec.	Sm. dec.	High	Common	Fair	Fair			1	21
boxelder	Acer negundo	WSH	Low	16.9	69.4	6.6	Sm. inc.	Sm. inc.	High	Common	Very Good	Very Good			1	22
pin oak	Quercus palustris	NSH	Low	9.2	67.1	13.8	Sm. dec.	Sm. dec.	Low	Common	Poor	Poor	Infill +	Infill +	0	23
eastern white pine	Pinus strobus	WDH	High	14.2	63.2	6.0	Lg. dec.	Very Lg. dec.	Low	Common	Very Poor	Lost			0	24
bigtooth aspen	Populus grandidentata	NSL	Medium	16	62.6	3.9	Very Lg. dec.	Very Lg. dec.	Medium	Common	Lost	Lost			0	25
blackgum	Nyssa sylvatica	WDL	Medium	17.2	49.4	2.1	Sm. inc.	Sm. inc.	High	Rare	Good	Good			1	26
American basswood	Tilia americana	WSL	Medium	22.1	46.1	2.8	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	27
eastern cottonwood	Populus deltoides	NSH	Low	13	38.1	3.6	Lg. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	28
ailanthus	Ailanthus altissima	NSL	FIA	3.3	35.8	11.4	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	29
scarlet oak	Quercus coccinea	WDL	Medium	13.9	32.9	4.7	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	1	30
shingle oak	Quercus imbricaria	NDH	Medium	7.7	31.5	6.1	No change	Sm. dec.	Medium	Rare	Poor	Very Poor	Infill +		2	31
pignut hickory	Carya glabra	WDL	Medium	21.9	30.6	2.3	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			1	32
mockernut hickory	Carya alba	WDL	Medium	16.2	29.8	1.9	Lg. inc.	Lg. inc.	High	Rare	Good	Good			1	33
Osage-orange	Maclura pomifera	NDH	Medium	13.9	29.7	16.7	Sm. inc.	Lg. inc.	High	Rare	Good	Good	Infill ++	Infill ++	1	34
Norway spruce	Picea abies	NSH	FIA	1.1	24.9	23.4	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	35
cucumber tree	Magnolia acuminata	NSL	Low	2.5	22.5	4.9	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	36
honeylocust	Gleditsia triacanthos	NSH	Low	11.2	21.6	6.7	Lg. inc.	Lg. inc.	High	Rare	Good	Good	Infill ++	Infill ++	1	37
flowering dogwood	Cornus florida	WDL	Medium	16.4	21.2	1.6	Sm. inc.	Sm. inc.	Medium	Rare	Fair	Fair			1	38
red pine	Pinus resinosa	NSH	Medium	7.8	16.5	7.7	Lg. dec.	Lg. dec.	Low	Rare	Very Poor	Very Poor			0	39
American hornbeam; musclev	Carpinus caroliniana	WSL	Low	12.5	15.8	1.1	Lg. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	40
swamp white oak	Quercus bicolor	NSL	Low	1.1	11.8	11.1	Sm. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			2	41
bur oak	Quercus macrocarpa	NDH	Medium	13.6	11.3	2.2	Sm. dec.	Sm. inc.	High	Rare	Poor	Good		Infill ++	2	42
river birch	Betula nigra	NSL	Low	0.3	11.1	3.2	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	43
white mulberry	Morus alba	NSL	FIA	3.5	9.7	5.0	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	44
Scots pine	Pinus sylvestris	NSH	FIA	3.1	9.7	2.2	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	45
pin cherry	Prunus pensylvanica	NSL	Low	1.1	8.6	8.1	Very Lg. dec.	Very Lg. dec.	Medium	Rare	Lost	Lost			0	46
black ash	Fraxinus nigra	WSH	Medium	5.8	7.0	5.3	Very Lg. dec.	Very Lg. dec.	Low	Rare	Lost	Lost			0	47



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eastern hemlock	Tsuga canadensis	NSH	High	1.1	5.0	4.7	Lg. dec.	Very Lg. dec.	Low	Rare	Very Poor	Lost				0 48
hackberry	Celtis occidentalis	WDH	Medium	24	4.8	1.5	Lg. inc.	Lg. inc.	High	Rare	Good	Good	Infill ++	Infill ++		1 49
shellbark hickory	Carya laciniosa	NSL	Low	1.4	3.9	1.6	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor				0 50
serviceberry	Amelanchier spp.	NSL	Low	8.8	3.6	1.2	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor				0 51
Ohio buckeye	Aesculus glabra	NSL	Low	12.9	1.9	1.5	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor				0 52
pitch pine	Pinus rigida	NSH	High	0.3	1.7	0.5	Very Lg. dec.	Very Lg. dec.	Medium	Rare	Lost	Lost				0 53
quaking aspen	Populus tremuloides	WDH	High	1.1	1.5	1.4	Very Lg. dec.	Very Lg. dec.	Medium	Rare	Lost	Lost				0 54
eastern redbud	Cercis canadensis	NSL	Low	0.3	1.4	0.4	Sm. inc.	Lg. inc.	Medium	Rare	Fair	Good	Infill +	Infill ++		2 55
pawpaw	Asimina triloba	NSL	Low	1.1	1.4	1.3	Very Lg. dec.	Very Lg. dec.	Medium	Rare	Lost	Lost				0 56
butternut	Juglans cinerea	NSLX	FIA	1.1	1.4	1.3	Unknown	Unknown	Low	Rare	FIA Only	FIA Only				0 57
black maple	Acer nigrum	NSH	Low	5.3	1.1	0.8	Very Lg. dec.	Very Lg. dec.	High	Rare	Lost	Lost				0 58
yellow buckeye	Aesculus flava	NSL	Low	3.6	0.9	0.7	Lg. dec.	Lg. dec.	Low	Rare	Very Poor	Very Poor				0 59
chokecherry	Prunus virginiana	NSLX	FIA	1.1	0.9	0.8	Unknown	Unknown	Medium	Rare	FIA Only	FIA Only				0 60
red mulberry	Morus rubra	NSL	Low	4.2	0.2	0.8	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good		Infill ++		2 61
sweet birch	Betula lenta	NDH	High	2.8	0.2	0.4	Lg. dec.	Lg. dec.	Low	Rare	Very Poor	Very Poor				0 62
Virginia pine	Pinus virginiana	NDH	High	2.8	0.2	0.4	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good				2 63
Norway maple	Acer platanoides	NSL	FIA	4.2	0.2	0.6	Unknown	Unknown	NA	Rare	NNIS	NNIS				0 64
eastern redcedar	Juniperus virginiana	WDH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate ++	Migrate ++		3 65
shortleaf pine	Pinus echinata	WDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate +		3 66
loblolly pine	Pinus taeda	WDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate ++		3 67
yellow birch	Betula alleghaniensis	NDL	High	0	0	0	Unknown	Unknown	Medium	Modeled	Unknown	Unknown				0 68
pecan	Carya illinoensis	NSH	Low	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat				3 69
black hickory	Carya texana	NDL	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat				3 70
sugarberry	Celtis laevigata	NDH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate ++		3 71
common persimmon	Diospyros virginiana	NSL	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Migrate +	Migrate +		3 72
sweetgum	Liquidambar styraciflua	WDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Likely +	Likely +		3 73
bigleaf magnolia	Magnolia macrophylla	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown				0 74
sourwood	Oxydendrum arboreum	NDL	High	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat				3 75
southern red oak	Quercus falcata	WDL	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat		Migrate ++		3 76
blackjack oak	Quercus marilandica	NSL	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat				3 77
chinkapin oak	Quercus muehlenbergii	NSL	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +	Migrate +		3 78
chestnut oak	Quercus prinus	NDH	High	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Migrate ++	Migrate ++		3 79
Shumard oak	Quercus shumardii	NSL	Low	0	0	0	Unknown	New Habitat	High	Absent	Unknown	New Habitat		Migrate +		3 80
post oak	Quercus stellata	WDH	High	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Migrate ++	Migrate ++		3 81
bluejack oak	Quercus incana	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown				0 82
winged elm	Ulmus alata	WDL	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +	Migrate ++		3 83