

Climate Change Atlas Tree Species
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
chestnut oak	Quercus prinus	NDH	High	59.7	1000.8	18.43	No change	No change	High	Abundant	Very Good	Very Good	Infill ++	Infill ++	1	1
red maple	Acer rubrum	WDH	High	93.5	1000.78	11.22	No change	No change	High	Abundant	Very Good	Very Good			1	2
northern red oak	Quercus rubra	WDH	Medium	66.9	513.11	8.37	Sm. inc.	Sm. inc.	High	Abundant	Very Good	Very Good			1	3
sugar maple	Acer saccharum	WDH	High	52.3	508.4	9.92	Sm. inc.	No change	High	Abundant	Very Good	Very Good			1	4
yellow-poplar	Liriodendron tulipifera	WDH	High	45.8	436.24	10.48	No change	No change	High	Common	Good	Good	Infill ++	Infill ++	1	5
red spruce	Picea rubens	NDH	High	28.5	421.28	14.79	Sm. dec.	Lg. dec.	Low	Common	Poor	Very Poor	Infill +		0	6
balsam fir	Abies balsamea	NDH	High	23.8	390.84	16.39	Lg. dec.	Lg. dec.	Low	Common	Very Poor	Very Poor			2	7
American beech	Fagus grandifolia	WDH	High	45.8	368.95	8.4	No change	No change	Medium	Common	Fair	Fair			1	8
yellow birch	Betula alleghaniensis	NDL	High	42.7	353.94	8.28	Sm. dec.	Sm. dec.	Medium	Common	Poor	Poor	Infill +	Infill +	0	9
sweet birch	Betula lenta	NDH	High	56.6	340.28	6.58	No change	No change	Low	Common	Poor	Poor	Infill +	Infill +	0	10
eastern hemlock	Tsuga canadensis	NSH	High	49.2	324.87	7.02	Sm. inc.	Sm. inc.	Low	Common	Fair	Fair			1	11
eastern white pine	Pinus strobus	WDH	High	45.8	311.24	7.27	Sm. inc.	Sm. inc.	Low	Common	Fair	Fair			1	12
white oak	Quercus alba	WDH	Medium	44.3	248.44	5.96	Lg. inc.	Lg. inc.	High	Common	Very Good	Very Good	Infill ++	Infill ++	1	13
white ash	Fraxinus americana	WDL	Medium	48.3	246.99	5.58	Sm. inc.	Sm. inc.	Low	Common	Fair	Fair			1	14
paper birch	Betula papyrifera	WDH	High	27.9	241.59	8.67	Sm. dec.	Sm. dec.	Medium	Common	Poor	Poor	Infill +	Infill +	0	15
scarlet oak	Quercus coccinea	WDL	Medium	42.4	240.1	6.34	Sm. inc.	Sm. inc.	Medium	Common	Good	Good	Infill ++	Infill ++	1	16
blackgum	Nyssa sylvatica	WDL	Medium	49.6	186.57	4.29	Sm. inc.	Sm. inc.	High	Common	Very Good	Very Good	Infill ++	Infill ++	1	17
black cherry	Prunus serotina	WDL	Medium	43	183.87	4.85	Sm. inc.	Lg. inc.	Low	Common	Fair	Good			1	18
black oak	Quercus velutina	WDH	High	44	160.02	4.18	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good	Infill ++	Infill ++	1	19
black locust	Robinia pseudoacacia	NDH	Low	38.4	140.87	3.88	Sm. inc.	Lg. inc.	Medium	Common	Good	Very Good	Infill ++	Infill ++	1	20
sourwood	Oxydendrum arboreum	NDL	High	27.3	139.78	5.13	No change	No change	High	Common	Good	Good	Infill ++	Infill ++	2	21
pignut hickory	Carya glabra	WDL	Medium	45.8	137.2	3.39	Sm. inc.	Lg. inc.	Medium	Common	Good	Very Good	Infill ++	Infill ++	1	22
Virginia pine	Pinus virginiana	NDH	High	18.9	96.49	5.11	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good	Infill ++	Infill ++	2	23
striped maple	Acer pensylvanicum	NSL	Medium	44.3	84.58	1.91	Sm. dec.	Sm. dec.	Medium	Common	Poor	Poor			0	24
pitch pine	Pinus rigida	NSH	High	21.4	78.2	4.02	Sm. inc.	Sm. inc.	Medium	Common	Good	Good	Infill ++	Infill ++	1	25
mockernut hickory	Carya alba	WDL	Medium	26.6	78.08	3.04	Lg. inc.	Lg. inc.	High	Common	Very Good	Very Good	Infill ++	Infill ++	1	26
sassafras	Sassafras albidum	WSL	Low	32.8	78.04	2.56	Sm. inc.	Lg. inc.	Medium	Common	Good	Very Good	Infill ++	Infill ++	1	27
northern white-cedar	Thuja occidentalis	WSH	High	9	69.7	7.76	No change	No change	Medium	Common	Fair	Fair	Infill +	Infill +	2	28
eastern redcedar	Juniperus virginiana	WDH	Medium	6.2	59.66	11.67	Sm. inc.	Lg. inc.	Medium	Common	Good	Very Good	Infill ++	Infill ++	2	29
American basswood	Tilia americana	WSL	Medium	18.5	52.08	2.8	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good	Infill ++	Infill ++	1	30
black walnut	Juglans nigra	WDH	Low	10.8	42.62	4.48	Sm. inc.	Lg. inc.	Medium	Rare	Fair	Good	Infill +	Infill ++	1	31
ailanthus	Ailanthus altissima	NSL	FIA	12.7	38.54	3.62	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	32
serviceberry	Amelanchier spp.	NSL	Low	32.5	38.11	1.25	No change	No change	Medium	Rare	Poor	Poor			1	33
eastern hophornbeam; ironw	Ostrya virginiana	WSL	Low	21.1	36.02	1.89	Lg. inc.	Lg. inc.	High	Rare	Good	Good	Infill ++	Infill ++	1	34
yellow buckeye	Aesculus flava	NSL	Low	7.1	31.08	4.36	No change	No change	Low	Rare	Very Poor	Very Poor			2	35
black spruce	Picea mariana	NSH	High	3.1	29.99	9.68	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	2	36
green ash	Fraxinus pennsylvanica	WSH	Low	9.3	28.06	4.01	No change	Sm. inc.	Medium	Rare	Poor	Fair	Infill +	Infill +	1	37
shagbark hickory	Carya ovata	WSL	Medium	15.8	26.56	2.36	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good	Infill ++	Infill ++	2	38
American elm	Ulmus americana	WDH	Medium	15.1	24.85	2.1	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good	Infill ++	Infill ++	2	39
boxelder	Acer negundo	WSH	Low	2.8	24.06	8.63	Sm. dec.	No change	High	Rare	Poor	Fair		Infill +	2	40
mountain or Fraser magnolia	Magnolia fraseri	NSL	Low	10.5	23.59	2.24	Sm. inc.	Sm. inc.	NA	Rare	Unknown	Unknown			0	41
bitternut hickory	Carya cordiformis	WSL	Low	10.8	23.35	2.49	Lg. inc.	Lg. inc.	High	Rare	Good	Good	Infill ++	Infill ++	1	42
bigtooth aspen	Populus grandidentata	NSL	Medium	10.5	22.5	2.74	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good	Infill ++	Infill ++	1	43
slippery elm	Ulmus rubra	WSL	Low	5	22.35	4.51	Sm. dec.	No change	Medium	Rare	Very Poor	Poor		Infill +	2	44
quaking aspen	Populus tremuloides	WDH	High	11.1	21.83	2.15	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good	Infill ++	Infill ++	1	45
cucumbertree	Magnolia acuminata	NSL	Low	12.7	21.22	1.67	No change	Sm. inc.	Medium	Rare	Poor	Fair	Infill +	Infill +	2	46
black ash	Fraxinus nigra	WSH	Medium	4	20.48	5.09	No change	No change	Low	Rare	Very Poor	Very Poor			2	47
silver maple	Acer saccharinum	NSH	Low	0.9	19.81	21.32	Sm. dec.	Sm. dec.	High	Rare	Poor	Poor	Infill +	Infill +	2	48
flowering dogwood	Cornus florida	WDL	Medium	20.8	19.56	1	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good	Infill ++	Infill ++	1	49
sycamore	Platanus occidentalis	NSL	Low	5	18.92	4.88	No change	Lg. inc.	Medium	Rare	Poor	Good	Infill +		2	50
pin cherry	Prunus pensylvanica	NSL	Low	11.8	17.19	1.46	Sm. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	51
shortleaf pine	Pinus echinata	WDH	High	8.4	16.42	1.96	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good	Infill ++	Infill ++	2	52
Table Mountain pine	Pinus pungens	NSL	Low	5.3	15.53	2.95	No change	No change	High	Rare	Fair	Fair	Infill +	Infill +	2	53

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loblolly pine	Pinus taeda	WDH	High	3.1	15.25	4.92	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			2	54
white spruce	Picea glauca	NSL	Medium	4.6	14.96	3.22	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	2	55
pin oak	Quercus palustris	NSH	Low	2.5	14.19	10.32	Sm. dec.	No change	Low	Rare	Very Poor	Very Poor			2	56
swamp white oak	Quercus bicolor	NSL	Low	0.9	13.49	14.52	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			2	57
American hornbeam; muscle	Carpinus caroliniana	WSL	Low	7.7	10.86	1.63	No change	Sm. inc.	Medium	Rare	Poor	Fair	Infill +	Infill +	1	58
butternut	Juglans cinerea	NSLX	FIA	1.9	10.07	5.42	Unknown	Unknown	Low	Rare	FIA Only	FIA Only			0	59
silverbell	Halesia spp.	NSL	Low	3.7	8.8	2.37	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	2	60
gray birch	Betula populifolia	NSL	Low	3.4	7.2	2.11	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	1	61
hackberry	Celtis occidentalis	WDH	Medium	4.6	6.8	1.86	No change	No change	High	Rare	Fair	Fair	Infill +	Infill +	2	62
common persimmon	Diospyros virginiana	NSL	Low	2.5	6.73	2.71	No change	Sm. inc.	High	Rare	Fair	Good	Infill +	Infill ++	2	63
southern red oak	Quercus falcata	WDL	Medium	4.6	6.72	1.45	Lg. inc.	Lg. inc.	High	Rare	Good	Good			2	64
American mountain-ash	Sorbus americana	NSL	Low	7.7	6.49	0.84	Sm. dec.	Sm. dec.	Low	Rare	Very Poor	Very Poor			0	65
eastern redbud	Cercis canadensis	NSL	Low	5	6.27	1.27	Sm. inc.	Sm. inc.	Medium	Rare	Fair	Fair	Infill +	Infill +	2	66
black willow	Salix nigra	NSH	Low	0.6	5.26	8.48	Sm. dec.	No change	Low	Rare	Very Poor	Very Poor			2	67
bear oak; scrub oak	Quercus ilicifolia	NSLX	FIA	1.9	4.73	2.54	Unknown	Unknown	Medium	Rare	FIA Only	FIA Only			0	68
tamarack (native)	Larix laricina	NSH	High	3.7	4.51	1.85	No change	Sm. inc.	Low	Rare	Very Poor	Poor		Infill +	2	69
American chestnut	Castanea dentata	NSLX	FIA	9	4.27	0.53	Unknown	Unknown	Medium	Rare	FIA Only	FIA Only			0	70
post oak	Quercus stellata	WDH	High	3.7	4.22	1.14	Lg. inc.	Lg. inc.	High	Rare	Good	Good			2	71
chinkapin oak	Quercus muehlenbergii	NSL	Medium	1.2	3.47	2.8	Sm. inc.	Lg. inc.	Medium	Rare	Fair	Good	Infill +		2	72
swamp chestnut oak	Quercus michauxii	NSL	Low	0.3	3.16	10.2	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			2	73
Norway maple	Acer platanoides	NSL	FIA	1.8	3.11	5.26	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	74
red pine	Pinus resinosa	NSH	Medium	2.5	3.01	2.01	Lg. inc.	Lg. inc.	Low	Rare	Fair	Fair	Infill +	Infill +	2	75
mountain maple	Acer spicatum	NSL	Low	4.6	2.97	0.64	Lg. dec.	Lg. dec.	High	Rare	Poor	Poor			0	76
Norway spruce	Picea abies	NSH	FIA	0.6	2.62	4.22	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	77
winged elm	Ulmus alata	WDL	Medium	0.9	2.1	2.26	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			2	78
bur oak	Quercus macrocarpa	NDH	Medium	0.3	2.08	6.7	Sm. dec.	Sm. dec.	High	Rare	Poor	Poor			0	79
American holly	Ilex opaca	NSL	Medium	2.2	1.77	0.81	Sm. dec.	No change	Medium	Rare	Very Poor	Poor		Infill +	2	80
paulownia	Paulownia tomentosa	NSL	FIA	2.2	1.77	1.75	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	81
Scotch pine	Pinus sylvestris	NSH	FIA	1.9	1.66	1.95	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	82
sweetgum	Liquidambar styraciflua	WDH	High	1.5	1.36	0.88	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			2	83
pawpaw	Asimina triloba	NSL	Low	1.9	1.26	0.68	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	84
shingle oak	Quercus imbricaria	NDH	Medium	0.3	1.14	3.68	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	85
river birch	Betula nigra	NSL	Low	0.3	1.12	3.63	Sm. dec.	Sm. inc.	Medium	Rare	Very Poor	Fair			2	86
honeylocust	Gleditsia triacanthos	NSH	Low	0.3	1.03	3.33	Sm. dec.	Sm. inc.	High	Rare	Poor	Good			2	87
balsam poplar	Populus balsamifera	NSH	Medium	0.9	0.76	0.82	Very Lg. dec.	Very Lg. dec.	Medium	Rare	Lost	Lost			0	88
jack pine	Pinus banksiana	NSH	Medium	0.3	0.63	2.05	No change	No change	High	Rare	Fair	Fair			2	89
red mulberry	Morus rubra	NSL	Low	1.9	0.58	1.54	No change	Sm. inc.	Medium	Rare	Poor	Fair	Infill +	Infill +	2	90
bigleaf magnolia	Magnolia macrophylla	NSL	Low	0.6	0.46	0.75	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	91
shellbark hickory	Carya laciniosa	NSL	Low	0.3	0.21	0.68	Lg. dec.	Very Lg. dec.	Medium	Rare	Very Poor	Lost			0	92
chokecherry	Prunus virginiana	NSLX	FIA	0.3	0.2	0.63	Unknown	Unknown	Medium	Rare	FIA Only	FIA Only			0	93
willow oak	Quercus phellos	NSL	Low	0.3	0.2	0.63	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			2	94
longleaf pine	Pinus palustris	NSH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate ++	3	95
bald cypress	Taxodium distichum	NSH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	96
pond cypress	Taxodium ascendens	NSH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	97
florida maple	Acer barbatum	NSL	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	98
black maple	Acer nigrum	NSH	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat			0	99
Ohio buckeye	Aesculus glabra	NSL	Low	0	0	0	Unknown	Unknown	Medium	Modeled	Unknown	Unknown			0	100
cittamwood/gum bumelia	Sideroxylon lanuginosum ssp	NSL	Low	0	0	0	Unknown	New Habitat	High	Absent	Unknown	New Habitat			3	101
pecan	Carya illinoensis	NSH	Low	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat		Migrate +	3	102
black hickory	Carya texana	NDL	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	103
sugarberry	Celtis laevigata	NDH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate ++	3	104
blue ash	Fraxinus quadrangulata	NSL	Low	0	0	0	Unknown	Unknown	Low	Absent	Unknown	Unknown			0	105
southern magnolia	Magnolia grandiflora	NSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Likely +	Likely +	3	106

National Park
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Common Name	Scientific Name	Range	MR	%Cell	FIAsum	FIAiv	ChngCl45	ChngCl85	Adap	Abund	Capabil45	Capabil85	SHIFT45	SHIFT85	SSO	N
redbay	Persea borbonia	NSL	Low	0	0	0	Unknown	Unknown	High	Absent	Unknown	Unknown			0	107
northern pin oak	Quercus ellipsoidalis	NSH	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat			3	108
cherrybark oak; swamp red o	Quercus pagoda	NSL	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate +	3	109
overcup oak	Quercus lyrata	NSL	Medium	0	0	0	Unknown	New Habitat	Low	Absent	Unknown	New Habitat			3	110
blackjack oak	Quercus marilandica	NSL	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Likely +	Likely +	3	111
water oak	Quercus nigra	WDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Likely +	Likely +	3	112
Shumard oak	Quercus shumardii	NSL	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat		Migrate +	3	113
live oak	Quercus virginiana	NDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate ++	3	114
bluejack oak	Quercus incana	NSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate +	3	115