



One x One Degree  
Climate Change Atlas Tree Species

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Northern Research Station  
Landscape Change Research Group  
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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
sugar maple	Acer saccharum	WDH	High	88.6	1682.8	13.8	Sm. dec.	Lg. dec.	High	Abundant	Good	Good			1	1
yellow-poplar	Liriodendron tulipifera	WDH	High	75.9	954.1	10.5	Lg. dec.	Lg. dec.	High	Abundant	Good	Good			1	2
white oak	Quercus alba	WDH	Medium	75.4	780.3	8.5	No change	No change	High	Abundant	Very Good	Very Good			1	3
red maple	Acer rubrum	WDH	High	62	543.6	6.2	Sm. dec.	No change	High	Abundant	Good	Very Good			1	4
black oak	Quercus velutina	WDH	High	69.8	525.6	5.7	No change	No change	Medium	Abundant	Good	Good			1	5
white ash	Fraxinus americana	WDL	Medium	75.7	476.8	4.8	No change	No change	Low	Common	Poor	Poor			0	6
American beech	Fagus grandifolia	WDH	High	69.8	474.1	5.0	Lg. dec.	Lg. dec.	Medium	Common	Poor	Poor			0	7
eastern redcedar	Juniperus virginiana	WDH	Medium	52.9	466.3	7.1	Sm. inc.	Lg. inc.	Medium	Common	Good	Very Good			1	8
pignut hickory	Carya glabra	WDL	Medium	75	453.2	5.0	Sm. dec.	Sm. dec.	Medium	Common	Poor	Poor			0	9
black cherry	Prunus serotina	WDL	Medium	67.6	370.0	4.3	No change	Sm. dec.	Low	Common	Poor	Poor			0	10
sassafras	Sassafras albidum	WSL	Low	77.8	346.5	3.4	Sm. dec.	Sm. dec.	Medium	Common	Poor	Poor			0	11
shagbark hickory	Carya ovata	WSL	Medium	70.1	324.8	3.6	Sm. dec.	Sm. dec.	Medium	Common	Poor	Poor			0	12
northern red oak	Quercus rubra	WDH	Medium	62.6	233.4	3.2	No change	No change	High	Common	Good	Good			1	13
American elm	Ulmus americana	WDH	Medium	64.5	216.7	2.3	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good			1	14
sweetgum	Liquidambar styraciflua	WDH	High	18.5	188.2	7.7	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good			1	15
blackgum	Nyssa sylvatica	WDL	Medium	65	179.0	2.4	Sm. inc.	Sm. inc.	High	Common	Very Good	Very Good			1	16
sycamore	Platanus occidentalis	NSL	Low	46.9	172.9	2.9	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good			1	17
black walnut	Juglans nigra	WDH	Low	47.5	168.2	2.5	Sm. inc.	Sm. inc.	Medium	Common	Good	Good			1	18
black locust	Robinia pseudoacacia	NDH	Low	14.4	165.9	5.5	No change	Sm. inc.	Medium	Common	Fair	Good			1	19
Virginia pine	Pinus virginiana	NDH	High	17.6	146.0	5.5	Sm. dec.	Sm. dec.	Medium	Common	Poor	Poor			0	20
chestnut oak	Quercus prinus	NDH	High	14.5	134.9	7.0	Sm. dec.	Sm. dec.	High	Common	Fair	Fair	Infill +	Infill +	1	21
post oak	Quercus stellata	WDH	High	9.3	116.9	3.2	Lg. inc.	Lg. inc.	High	Common	Very Good	Very Good	Infill ++	Infill ++	1	22
green ash	Fraxinus pennsylvanica	WSH	Low	18.5	109.6	4.6	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good			1	23
slippery elm	Ulmus rubra	WSL	Low	47.1	109.5	1.6	Sm. inc.	Lg. inc.	Medium	Common	Good	Very Good			1	24
bitternut hickory	Carya cordiformis	WSL	Low	34.9	108.0	3.1	Sm. inc.	Lg. inc.	High	Common	Very Good	Very Good			1	25
hackberry	Celtis occidentalis	WDH	Medium	33.4	100.3	2.5	Sm. inc.	Lg. inc.	High	Common	Very Good	Very Good			1	26
chinkapin oak	Quercus muehlenbergii	NSL	Medium	32.7	97.4	2.4	No change	No change	Medium	Common	Fair	Fair			1	27
flowering dogwood	Cornus florida	WDL	Medium	49.5	95.2	1.5	Sm. inc.	Sm. inc.	Medium	Common	Good	Good			1	28
silver maple	Acer saccharinum	NSH	Low	7.6	93.4	4.4	No change	No change	High	Common	Good	Good	Infill ++	Infill ++	1	29
boxelder	Acer negundo	WSH	Low	23.3	91.1	4.0	Sm. inc.	Lg. inc.	High	Common	Very Good	Very Good			1	30
eastern white pine	Pinus strobus	WDH	High	12.7	88.2	5.9	Lg. dec.	Lg. dec.	Low	Common	Very Poor	Very Poor			0	31
common persimmon	Diospyros virginiana	NSL	Low	39.5	87.8	1.7	Lg. inc.	Lg. inc.	High	Common	Very Good	Very Good			1	32
black willow	Salix nigra	NSH	Low	1	74.8	9.1	Sm. dec.	No change	Low	Common	Poor	Poor		Infill +	2	33
eastern redbud	Cercis canadensis	NSL	Low	35.6	52.5	1.2	No change	Sm. inc.	Medium	Common	Fair	Good			1	34
scarlet oak	Quercus coccinea	WDL	Medium	19.3	51.4	2.2	No change	Sm. dec.	Medium	Common	Fair	Poor			1	35
shingle oak	Quercus imbricaria	NDH	Medium	17.1	44.7	2.5	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	36
winged elm	Ulmus alata	WDL	Medium	16.5	40.8	2.4	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			1	37
American hornbeam; musclev	Carpinus caroliniana	WSL	Low	20.8	37.4	1.3	Sm. inc.	Lg. inc.	Medium	Rare	Fair	Good			1	38
pin oak	Quercus palustris	NSH	Low	8.6	33.9	2.1	No change	No change	Low	Rare	Very Poor	Very Poor			0	39
ailanthus	Ailanthus altissima	NSL	FIA	4.7	30.5	1.6	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	40
eastern hophornbeam; ironw	Ostrya virginiana	WSL	Low	22.5	30.0	1.0	Lg. inc.	Lg. inc.	High	Rare	Good	Good			1	41
pawpaw	Asimina triloba	NSL	Low	19.3	28.6	1.6	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	42
shortleaf pine	Pinus echinata	WDH	High	5	26.3	4.9	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good	Infill ++	Infill ++	1	43
mockernut hickory	Carya alba	WDL	Medium	11.7	18.2	2.0	Lg. inc.	Lg. inc.	High	Rare	Good	Good			1	44
Osage-orange	Maclura pomifera	NDH	Medium	6.6	17.8	1.4	Sm. dec.	Sm. inc.	High	Rare	Poor	Good		Infill ++	2	45
eastern cottonwood	Populus deltoides	NSH	Low	4.5	15.5	3.0	Sm. dec.	No change	Medium	Rare	Very Poor	Poor		Infill +	2	46
honeylocust	Gleditsia triacanthos	NSH	Low	6.3	15.1	1.9	No change	Lg. inc.	High	Rare	Fair	Good	Infill +	Infill ++	1	47



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river birch	Betula nigra	NSL	Low	1.6	13.3	3.6	Sm. dec.	No change	Medium	Rare	Very Poor	Poor	Infill +		2	48
northern pin oak	Quercus ellipsoidalis	NSH	Medium	0.6	10.6	5.5	Sm. dec.	Sm. dec.	High	Rare	Poor	Poor			0	49
swamp white oak	Quercus bicolor	NSL	Low	0.3	9.6	3.2	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	50
American basswood	Tilia americana	WSL	Medium	8.3	9.2	1.1	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	51
swamp chestnut oak	Quercus michauxii	NSL	Low	1.3	8.4	2.6	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	52
red pine	Pinus resinosa	NSH	Medium	2.7	6.6	1.8	Lg. dec.	Lg. dec.	Low	Rare	Very Poor	Very Poor			0	53
red mulberry	Morus rubra	NSL	Low	5.2	6.5	0.7	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	1	54
bigtooth aspen	Populus grandidentata	NSL	Medium	4.2	6.3	1.1	Very Lg. dec.	Very Lg. dec.	Medium	Rare	Lost	Lost			0	55
black maple	Acer nigrum	NSH	Low	2.1	5.1	2.5	Lg. dec.	Lg. dec.	High	Rare	Poor	Poor			0	56
blue ash	Fraxinus quadrangulata	NSL	Low	2.1	4.3	2.1	Sm. dec.	Sm. dec.	Low	Rare	Very Poor	Very Poor			0	57
Ohio buckeye	Aesculus glabra	NSL	Low	2.3	3.6	1.0	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	58
Kentucky coffeetree	Gymnocladus dioicus	NSLX	FIA	2.1	3.1	1.5	Unknown	Unknown	Medium	Rare	FIA Only	FIA Only			0	59
serviceberry	Amelanchier spp.	NSL	Low	1.9	1.3	0.6	Lg. dec.	Very Lg. dec.	Medium	Rare	Very Poor	Lost			0	60
Scots pine	Pinus sylvestris	NSH	FIA	2.1	1.1	0.6	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	61
northern catalpa	Catalpa speciosa	NSHX	FIA	1	0.9	0.9	Unknown	Unknown	Medium	Rare	FIA Only	FIA Only			0	62
bur oak	Quercus macrocarpa	NDH	Medium	1	0.8	0.7	Very Lg. dec.	Very Lg. dec.	High	Rare	Lost	Lost			0	63
black hickory	Carya texana	NDL	High	1	0.6	0.6	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			2	64
rock elm	Ulmus thomasii	NSLX	FIA	1	0.6	0.6	Unknown	Unknown	Low	Rare	FIA Only	FIA Only			0	65
blackjack oak	Quercus marilandica	NSL	Medium	1	0.5	0.5	Lg. inc.	Lg. inc.	High	Rare	Good	Good			2	66
butternut	Juglans cinerea	NSLX	FIA	1	0.2	0.2	Unknown	Unknown	Low	Rare	FIA Only	FIA Only			0	67
ashe juniper	Juniperus ashei	NDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			0	68
loblolly pine	Pinus taeda	WDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate ++	Migrate ++	3	69
striped maple	Acer pensylvanicum	NSL	Medium	0	0	0	Unknown	New Habitat	Medium	Absent	Unknown	New Habitat	Likely +		3	70
mountain maple	Acer spicatum	NSL	Low	0	0	0	Unknown	New Habitat	High	Absent	Unknown	New Habitat			3	71
yellow birch	Betula alleghaniensis	NDL	High	0	0	0	Unknown	Unknown	Medium	Modeled	Unknown	Unknown			0	72
cittamwood/gum bumelia	Sideroxylon lanuginosum ssp.	NSL	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat			3	73
pecan	Carya illinoensis	NSH	Low	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat		Migrate +	3	74
shellbark hickory	Carya laciniosa	NSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Likely +	Likely +	3	75
sugarberry	Celtis laevigata	NDH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate ++	Migrate ++	3	76
black ash	Fraxinus nigra	WSH	Medium	0	0	0	Unknown	New Habitat	Low	Absent	Unknown	New Habitat			3	77
American holly	Ilex opaca	NSL	Medium	0	0	0	Unknown	Unknown	Medium	Modeled	Unknown	Unknown			0	78
sourwood	Oxydendrum arboreum	NDL	High	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Likely +	Likely +	3	79
pin cherry	Prunus pensylvanica	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	80
southern red oak	Quercus falcata	WDL	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Likely +	Likely +	3	81
cherrybark oak; swamp red o.	Quercus pagoda	NSL	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Likely +	Likely +	3	82
water oak	Quercus nigra	WDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +	Migrate ++	3	83
willow oak	Quercus phellos	NSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +	Migrate ++	3	84
Shumard oak	Quercus shumardii	NSL	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Likely +	Likely +	3	85
live oak	Quercus virginiana	NDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			0	86
cedar elm	Ulmus crassifolia	NDH	Medium	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat			3	87