

Section 223G

EcoMap 2007
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
hackberry	Celtis occidentalis	WDH	Medium	62.5	167.6	8.4	Sm. dec.	No change	High	Common	Fair	Good			1	1
sugar maple	Acer saccharum	WDH	High	34.4	166.8	8.2	No change	No change	High	Common	Good	Good	Infill ++	Infill ++	1	2
American elm	Ulmus americana	WDH	Medium	78.7	165.9	5.9	Sm. inc.	Sm. inc.	Medium	Common	Good	Good			1	3
sassafras	Sassafras albidum	WSL	Low	49.2	160.2	6.7	Sm. dec.	Lg. dec.	Medium	Common	Poor	Poor			0	4
silver maple	Acer saccharinum	NSH	Low	34.9	143.1	13.1	No change	No change	High	Common	Good	Good			1	5
white oak	Quercus alba	WDH	Medium	37.2	140.7	8.9	No change	No change	High	Common	Good	Good			1	6
black cherry	Prunus serotina	WDL	Medium	63.4	140.7	5.9	Sm. dec.	Sm. dec.	Low	Common	Poor	Poor			0	7
shingle oak	Quercus imbricaria	NDH	Medium	47.1	130.4	8.3	Lg. dec.	Lg. dec.	Medium	Common	Poor	Poor			0	8
green ash	Fraxinus pennsylvanica	WSH	Low	60.4	114.9	7.2	Sm. inc.	Sm. inc.	Medium	Common	Good	Good			1	9
shagbark hickory	Carya ovata	WSL	Medium	59.9	110.8	6.1	Sm. dec.	Sm. dec.	Medium	Common	Poor	Poor			0	10
red maple	Acer rubrum	WDH	High	36.3	110.8	8.6	No change	No change	High	Common	Good	Good	Infill ++	Infill ++	1	11
white ash	Fraxinus americana	WDL	Medium	37.5	103.5	5.8	Sm. inc.	Sm. inc.	Low	Common	Fair	Fair			1	12
pignut hickory	Carya glabra	WDL	Medium	37.3	97.6	6.4	Sm. dec.	Sm. dec.	Medium	Common	Poor	Poor			0	13
boxelder	Acer negundo	WSH	Low	40.9	95.6	6.6	No change	No change	High	Common	Good	Good			1	14
black walnut	Juglans nigra	WDH	Low	46.8	94.5	5.5	No change	No change	Medium	Common	Fair	Fair			1	15
black oak	Quercus velutina	WDH	High	46.8	90.9	6.2	Sm. inc.	Sm. inc.	Medium	Common	Good	Good			1	16
sycamore	Platanus occidentalis	NSL	Low	32.8	87.7	5.7	Sm. inc.	Sm. inc.	Medium	Common	Good	Good	Infill ++	Infill ++	1	17
eastern cottonwood	Populus deltoides	NSH	Low	22.5	78.2	8.6	Sm. dec.	Sm. dec.	Medium	Common	Poor	Poor	Infill +	Infill +	0	18
yellow-poplar	Liriodendron tulipifera	WDH	High	12.4	76.8	6.3	Sm. dec.	Lg. dec.	High	Common	Fair	Fair	Infill +	Infill +	2	19
honeylocust	Gleditsia triacanthos	NSH	Low	28.4	73.2	8.4	Sm. dec.	No change	High	Common	Fair	Good	Infill +	Infill ++	1	20
black willow	Salix nigra	NSH	Low	10	65.1	14.1	No change	No change	Low	Common	Poor	Poor	Infill +	Infill +	2	21
northern red oak	Quercus rubra	WDH	Medium	21.3	58.7	4.7	Sm. dec.	Lg. dec.	High	Common	Fair	Fair	Infill +	Infill +	1	22
pin oak	Quercus palustris	NSH	Low	34.3	58.2	6.7	No change	No change	Low	Common	Poor	Poor	Infill +	Infill +	0	23
bitternut hickory	Carya cordiformis	WSL	Low	30.3	52.1	4.3	Sm. inc.	Sm. inc.	High	Common	Very Good	Very Good	Infill ++	Infill ++	1	24
sweetgum	Liquidambar styraciflua	WDH	High	16.9	51.2	7.3	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good	Infill ++	Infill ++	1	25
black locust	Robinia pseudoacacia	NDH	Low	8.3	48.8	6.4	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	1	26
post oak	Quercus stellata	WDH	High	17.2	41.8	9.2	Lg. inc.	Lg. inc.	High	Rare	Good	Good	Infill ++	Infill ++	2	27
Osage-orange	Maclura pomifera	NDH	Medium	11.9	39.3	9.6	Sm. dec.	Sm. inc.	High	Rare	Poor	Good	Infill +	Infill ++	2	28
slippery elm	Ulmus rubra	WSL	Low	38	37.6	2.7	Sm. inc.	Lg. inc.	Medium	Rare	Fair	Good			1	29
mockernut hickory	Carya alba	WDL	Medium	29.4	35.0	4.1	Sm. inc.	Lg. inc.	High	Rare	Good	Good	Infill ++	Infill ++	1	30
river birch	Betula nigra	NSL	Low	16.8	27.2	5.3	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	31
common persimmon	Diospyros virginiana	NSL	Low	31.6	23.2	4.2	Lg. inc.	Lg. inc.	High	Rare	Good	Good			1	32
American beech	Fagus grandifolia	WDH	High	6.9	21.4	2.3	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	2	33
red mulberry	Morus rubra	NSL	Low	22.4	20.5	2.2	Sm. dec.	No change	Medium	Rare	Very Poor	Poor		Infill +	1	34
winged elm	Ulmus alata	WDL	Medium	6.2	19.9	8.0	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good	Infill ++	Infill ++	2	35
eastern redbud	Cercis canadensis	NSL	Low	17.9	17.7	2.1	Sm. dec.	No change	Medium	Rare	Very Poor	Poor		Infill +	1	36
eastern white pine	Pinus strobus	WDH	High	2.9	17.5	5.6	Lg. dec.	Lg. dec.	Low	Rare	Very Poor	Very Poor			0	37
eastern redcedar	Juniperus virginiana	WDH	Medium	17	17.5	2.7	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good	Infill ++	Infill ++	1	38
blackgum	Nyssa sylvatica	WDL	Medium	8.6	15.2	2.6	No change	No change	High	Rare	Fair	Fair	Infill +	Infill +	2	39
bur oak	Quercus macrocarpa	NDH	Medium	12.3	12.5	3.2	Lg. dec.	Lg. dec.	High	Rare	Poor	Poor	Infill +	Infill +	2	40
eastern hophornbeam; ironw	Ostrya virginiana	WSL	Low	7.8	12.1	2.2	No change	No change	High	Rare	Fair	Fair	Infill +	Infill +	2	41
Virginia pine	Pinus virginiana	NDH	High	2.3	11.4	4.6	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			2	42
chinkapin oak	Quercus muehlenbergii	NSL	Medium	11.4	10.8	1.9	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			2	43
flowering dogwood	Cornus florida	WDL	Medium	15.5	10.8	1.3	No change	Sm. inc.	Medium	Rare	Poor	Fair	Infill +	Infill +	1	44
shellbark hickory	Carya laciniosa	NSL	Low	10.6	9.0	6.2	No change	Sm. inc.	Medium	Rare	Poor	Fair	Infill +	Infill +	2	45
red pine	Pinus resinosa	NSH	Medium	1.6	7.7	9.2	Lg. dec.	Lg. dec.	Low	Rare	Very Poor	Very Poor			2	46
shortleaf pine	Pinus echinata	WDH	High	2.8	7.0	5.4	No change	Sm. inc.	Medium	Rare	Poor	Fair	Infill +	Infill +	2	47



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Common Name	Scientific Name	Range	MR	%Cell	FIAsum	FIAiv	ChngCl45	ChngCl85	Adap	Abund	Capabil45	Capabil85	SHIFT45	SHIFT85	SSO	N	
American basswood	Tilia americana	WSL	Medium	4	6.6	2.9	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor				0	48
American hornbeam; musclev	Carpinus caroliniana	WSL	Low	3.6	5.4	1.3	No change	Sm. inc.	Medium	Rare	Poor	Fair		Infill +		2	49
swamp white oak	Quercus bicolor	NSL	Low	8.8	5.3	3.7	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor				0	50
pecan	Carya illinoensis	NSH	Low	6.4	5.1	2.9	Lg. inc.	Lg. inc.	Low	Rare	Fair	Fair	Infill +	Infill +		2	51
northern catalpa	Catalpa speciosa	NSHX	FIA	2.5	4.8	3.2	Unknown	Unknown	Medium	Rare	FIA Only	FIA Only				0	52
loblolly pine	Pinus taeda	WDH	High	1.1	4.0	10.8	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good				2	53
pawpaw	Asimina triloba	NSL	Low	6.1	3.7	0.8	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor				0	54
white mulberry	Morus alba	NSL	FIA	6.1	3.6	2.3	Unknown	Unknown	NA	Rare	NNIS	NNIS				0	55
Shumard oak	Quercus shumardii	NSL	Low	1.5	3.2	3.2	No change	Lg. inc.	High	Rare	Fair	Good				2	56
cherrybark oak; swamp red o	Quercus pagoda	NSL	Medium	8.6	3.2	4.4	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good				2	57
black hickory	Carya texana	NDL	High	0.4	3.1	3.5	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good				2	58
southern red oak	Quercus falcata	WDL	Medium	0.3	3.1	4.0	Lg. inc.	Lg. inc.	High	Rare	Good	Good				2	59
bigtooth aspen	Populus grandidentata	NSL	Medium	0.5	2.9	2.0	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor				0	60
blackjack oak	Quercus marilandica	NSL	Medium	2.2	2.5	3.5	Lg. inc.	Lg. inc.	High	Rare	Good	Good				2	61
Ohio buckeye	Aesculus glabra	NSL	Low	1.4	2.4	1.5	Sm. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor				0	62
ailanthus	Ailanthus altissima	NSL	FIA	2.1	2.3	1.4	Unknown	Unknown	NA	Rare	NNIS	NNIS				0	63
swamp chestnut oak	Quercus michauxii	NSL	Low	0.4	1.9	3.5	No change	No change	Medium	Rare	Poor	Poor		Infill +		2	64
Kentucky coffeetree	Gymnocladus dioicus	NSLX	FIA	1.7	1.8	1.6	Unknown	Unknown	Medium	Rare	FIA Only	FIA Only				0	65
sugarberry	Celtis laevigata	NDH	Medium	2.8	1.2	4.1	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good				2	66
Scots pine	Pinus sylvestris	NSH	FIA	1.2	0.6	5.0	Unknown	Unknown	NA	Rare	NNIS	NNIS				0	67
scarlet oak	Quercus coccinea	WDL	Medium	1.4	0.5	0.8	No change	Sm. dec.	Medium	Rare	Poor	Very Poor	Infill +			2	68
serviceberry	Amelanchier spp.	NSL	Low	0.5	0.5	1.1	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor				0	69
blue ash	Fraxinus quadrangulata	NSL	Low	0.1	0.2	0.5	Lg. dec.	Lg. dec.	Low	Rare	Very Poor	Very Poor				0	70
Siberian elm	Ulmus pumila	NDH	FIA	0.8	0.1	1.8	Unknown	Unknown	NA	Rare	NNIS	NNIS				0	71
bald cypress	Taxodium distichum	NSH	Medium	0.9	0.1	1.1	Lg. dec.	No change	Medium	Rare	Very Poor	Poor				0	72
black maple	Acer nigrum	NSH	Low	0.9	0.0	0.4	Lg. dec.	Lg. dec.	High	Rare	Poor	Poor				0	73
butternut	Juglans cinerea	NSLX	FIA	0.9	0.0	0.3	Unknown	Unknown	Low	Rare	FIA Only	FIA Only				0	74
ashe juniper	Juniperus ashei	NDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat				0	75
striped maple	Acer pensylvanicum	NSL	Medium	0	0	0	Unknown	New Habitat	Medium	Absent	Unknown	New Habitat				3	76
mountain maple	Acer spicatum	NSL	Low	0	0	0	Unknown	Unknown	High	Absent	Unknown	Unknown				0	77
yellow buckeye	Aesculus flava	NSL	Low	0	0	0	Unknown	Unknown	Low	Modeled	Unknown	Unknown				0	78
yellow birch	Betula alleghaniensis	NDL	High	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown				0	79
cittamwood/gum bumelia	Sideroxylon lanuginosum ssp.	NSL	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat		Migrate ++		3	80
water hickory	Carya aquatica	NSL	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate +		3	81
cucumbertree	Magnolia acuminata	NSL	Low	0	0	0	Unknown	Unknown	Medium	Modeled	Unknown	Unknown				0	82
bigleaf magnolia	Magnolia macrophylla	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown				0	83
sourwood	Oxydendrum arboreum	NDL	High	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat				3	84
redbay	Persea borbonia	NSL	Low	0	0	0	Unknown	Unknown	High	Absent	Unknown	Unknown				0	85
water elm	Planera aquatica	NSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate +		3	86
pin cherry	Prunus pensylvanica	NSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat				3	87
overcup oak	Quercus lyrata	NSL	Medium	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat	Migrate +	Migrate +		3	88
water oak	Quercus nigra	WDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +	Migrate ++		3	89
willow oak	Quercus phellos	NSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +	Migrate ++		3	90
live oak	Quercus virginiana	NDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat				0	91
cedar elm	Ulmus crassifolia	NDH	Medium	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat				3	92

