

Area of Region    sq. km    sq. mi    FIA Plots  
104,615    40,392    2,445

**Species Information**

The columns below provide brief summaries of the species associated with the region and described in the table on the next pages. Definitions are provided in the Excel file for this region.

Genus	Species	Abundance		Model		Potential Change in Habitat Suitability		Capability to Cope or Persist		Migration Potential					
				Reliability	Adaptability	Scenario RCP45	Scenario RCP85	Scenario RCP45	Scenario RCP85	SHIFT RCP45	SHIFT RCP85				
Ash	4			High	25	27	Increase	29	31	Very Good	10	12	Likely	2	3
Hickory	7			Medium	36	62	No Change	17	20	Good	21	19	Infill	18	20
Maple	7	Abundant	4	Low	44	20	Decrease	39	34	Fair	11	14	Migrate	2	7
Oak	19	Common	34	FIA	11		New	14	14	Poor	19	19			
Pine	5	Rare	58				Unknown	17	17	Very Poor	23	20			
Other	54	Absent	20							FIA Only	6	6			
	<b>96</b>		<b>116</b>		<b>116</b>	<b>109</b>		<b>116</b>	<b>116</b>	Unknown	7	7		<b>22</b>	<b>30</b>
											<b>97</b>	<b>97</b>			

**Potential Changes in Climate Variables**

**Temperature (°F)**

Scenario	2009	2039	2069	2099	
Annual	56.1	57.9	60.3	60.5	
Average	56.1	58.4	61.1	64.2	
GFDL45	56.1	59.5	61.4	62.2	
GFDL85	56.1	59.1	62.4	66.2	
HAD45	56.1	58.7	62.1	63.4	
HAD85	56.1	59.2	63.7	67.8	
Growing Season	71.6	73.4	75.4	76.0	
May—Sep	71.6	73.8	76.7	80.7	
GFDL45	71.6	75.5	77.9	79.2	
GFDL85	71.6	75.2	79.3	83.6	
HAD45	71.6	74.9	78.1	79.8	
HAD85	71.6	75.3	81.6	85.6	
Coldest Month	32.0	33.6	35.1	35.6	
Average	32.0	34.9	35.9	37.5	
GFDL45	32.0	36.0	36.1	36.6	
GFDL85	32.0	34.1	35.2	35.9	
HAD45	32.0	32.8	35.1	35.3	
HAD85	32.0	34.0	35.9	37.7	
Warmest Month	76.9	78.7	80.0	80.3	
Average	76.9	79.3	81.0	82.8	
GFDL45	76.9	80.3	82.1	83.0	
GFDL85	76.9	80.8	83.4	85.8	
HAD45	76.9	81.0	83.7	84.6	
HAD85	76.9	82.7	87.2	89.2	

**Precipitation (in)**

Scenario	2009	2039	2069	2099	
Annual	47.6	49.0	53.6	52.6	
Total	47.6	52.7	53.5	57.1	
GFDL45	47.6	53.5	55.9	59.0	
GFDL85	47.6	52.5	57.1	60.3	
HAD45	47.6	47.5	50.3	50.1	
HAD85	47.6	48.2	45.8	49.8	
Growing Season	20.6	20.4	21.9	21.3	
May—Sep	20.6	21.7	20.3	21.6	
GFDL45	20.6	23.3	22.8	23.8	
GFDL85	20.6	22.4	23.0	23.8	
HAD45	20.6	20.2	18.9	19.0	
HAD85	20.6	20.1	16.3	17.0	

**NOTE:** For the six climate variables, four 30-year periods are used to indicate six potential future trajectories. The period ending in 2009 is based on modeled observations from the PRISM Climate Group and the three future periods were obtained from the NASA NEX-DCP30 dataset. Future climate projections from three models under two emission scenarios show estimates of each climate variable within the region. The three models are CCSM4, GFDL CM3, and HadGEM2-ES and the emission scenarios are the 4.5 and 8.5 RCP. The average value for the region is reported, even though locations within the region may vary substantially based on latitude, elevation, land-use, or other factors.

**Cite as:** Iverson, L.R.; Prasad, A.M.; Peters, M.P.; Matthews, S.N. 2019. Facilitating Adaptive Forest Management under Climate Change: A Spatially Specific Synthesis of 125 Species for Habitat Changes and Assisted Migration over the Eastern United States. *Forests*. 10(11): 989. <https://doi.org/10.3390/f10110989>.

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
yellow-poplar	Liriodendron tulipifera	WDH	High	61.6	637.1	10.2	Lg. dec.	Lg. dec.	High	Abundant	Good	Good			1	1
sugar maple	Acer saccharum	WDH	High	71.7	606.5	8.6	Sm. dec.	Sm. dec.	High	Abundant	Good	Good			1	2
white oak	Quercus alba	WDH	Medium	61.7	572.6	9.1	No change	No change	High	Abundant	Very Good	Very Good			1	3
red maple	Acer rubrum	WDH	High	59.1	503.5	8.4	Sm. dec.	Sm. dec.	High	Abundant	Good	Good			1	4
eastern redcedar	Juniperus virginiana	WDH	Medium	44	450.6	11.3	Sm. inc.	Sm. inc.	Medium	Common	Good	Good			1	5
chestnut oak	Quercus prinus	NDH	High	32.2	305.3	8.5	Sm. dec.	Sm. dec.	High	Common	Fair	Fair			1	6
pignut hickory	Carya glabra	WDL	Medium	57.8	269.2	4.8	Sm. dec.	Sm. dec.	Medium	Common	Poor	Poor			0	7
American beech	Fagus grandifolia	WDH	High	43.8	263.8	5.8	Sm. dec.	Sm. dec.	Medium	Common	Poor	Poor			0	8
white ash	Fraxinus americana	WDL	Medium	48.2	250.2	5.0	No change	No change	Low	Common	Poor	Poor			0	9
black oak	Quercus velutina	WDH	High	46.2	217.8	4.8	Sm. inc.	Sm. inc.	Medium	Common	Good	Good			1	10
Virginia pine	Pinus virginiana	NDH	High	25.3	210.7	8.1	Sm. dec.	Sm. dec.	Medium	Common	Poor	Poor			0	11
black locust	Robinia pseudoacacia	NDH	Low	34.4	193.3	6.0	Sm. dec.	No change	Medium	Common	Poor	Fair			1	12
sassafras	Sassafras albidum	WSL	Low	52.9	187.9	3.8	Sm. dec.	Sm. dec.	Medium	Common	Poor	Poor			0	13
green ash	Fraxinus pennsylvanica	WSH	Low	44.6	185.7	5.1	Sm. inc.	Sm. inc.	Medium	Common	Good	Good			1	14
northern red oak	Quercus rubra	WDH	Medium	45.1	180.5	4.2	Sm. inc.	Sm. inc.	High	Common	Very Good	Very Good			1	15
blackgum	Nyssa sylvatica	WDL	Medium	53.2	172.0	3.4	No change	Sm. inc.	High	Common	Good	Very Good			1	16
scarlet oak	Quercus coccinea	WDL	Medium	36.8	171.2	4.5	Sm. dec.	Lg. dec.	Medium	Common	Poor	Poor			0	17
sweetgum	Liquidambar styraciflua	WDH	High	27.5	169.6	7.1	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good			1	18
mockernut hickory	Carya alba	WDL	Medium	44.3	168.9	4.0	Sm. inc.	Sm. inc.	High	Common	Very Good	Very Good			1	19
black cherry	Prunus serotina	WDL	Medium	42.7	150.4	4.0	Sm. inc.	Sm. inc.	Low	Common	Fair	Fair			1	20
sycamore	Platanus occidentalis	NSL	Low	29.1	149.8	5.3	Sm. inc.	Sm. inc.	Medium	Common	Good	Good			1	21
black walnut	Juglans nigra	WDH	Low	36.8	147.8	4.6	No change	No change	Medium	Common	Fair	Fair			1	22
American elm	Ulmus americana	WDL	Medium	41.9	136.4	3.6	Sm. inc.	Lg. inc.	Medium	Common	Good	Very Good			1	23
hackberry	Celtis occidentalis	WDH	Medium	29.2	131.2	5.6	Sm. inc.	Sm. inc.	High	Common	Very Good	Very Good			1	24
chinkapin oak	Quercus muehlenbergii	NSL	Medium	27.9	130.5	5.0	Sm. dec.	Sm. dec.	Medium	Common	Poor	Poor			0	25
shagbark hickory	Carya ovata	WSL	Medium	41	111.2	3.0	Sm. inc.	No change	Medium	Common	Good	Fair			1	26
sourwood	Oxydendrum arboreum	NDL	High	34.9	109.6	2.9	Sm. dec.	Sm. dec.	High	Common	Fair	Fair			1	27
slippery elm	Ulmus rubra	WSL	Low	38.3	103.6	2.8	Sm. inc.	Sm. inc.	Medium	Common	Good	Good			1	28
winged elm	Ulmus alata	WDL	Medium	26.2	100.6	4.7	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good			1	29
flowering dogwood	Cornus florida	WDL	Medium	48.3	98.7	2.2	No change	No change	Medium	Common	Fair	Fair			1	30
post oak	Quercus stellata	WDH	High	18.1	94.1	6.0	Lg. inc.	Lg. inc.	High	Common	Very Good	Very Good	Infill ++	Infill ++	1	31
bitternut hickory	Carya cordiformis	WSL	Low	32.5	92.6	3.2	Sm. inc.	Sm. inc.	High	Common	Very Good	Very Good			1	32
boxelder	Acer negundo	WSH	Low	22.5	91.1	4.9	Sm. inc.	Sm. inc.	High	Common	Very Good	Very Good			1	33
eastern redbud	Cercis canadensis	NSL	Low	37.8	77.4	2.1	No change	No change	Medium	Common	Fair	Fair			0	34
southern red oak	Quercus falcata	WDL	Medium	17.3	75.2	4.9	Lg. inc.	Lg. inc.	High	Common	Very Good	Very Good			1	35
silver maple	Acer saccharinum	NSH	Low	6.6	60.4	9.4	Sm. dec.	No change	High	Common	Fair	Good	Infill +	Infill ++	1	36
eastern hemlock	Tsuga canadensis	NSH	High	8	54.0	5.7	Sm. dec.	Sm. dec.	Low	Common	Poor	Poor	Infill +	Infill +	2	37
shellbark hickory	Carya laciniosa	NSL	Low	16.7	53.1	3.5	Sm. dec.	Sm. dec.	Medium	Common	Poor	Poor	Infill +	Infill +	0	38
shortleaf pine	Pinus echinata	WDH	High	11.7	45.8	3.6	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good	Infill ++	Infill ++	1	39
American basswood	Tilia americana	WSL	Medium	13.1	45.3	2.9	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	40
loblolly pine	Pinus taeda	WDH	High	2.7	41.4	16.7	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good	Infill ++	Infill ++	2	41
sweet birch	Betula lenta	NDH	High	12.8	38.3	2.6	Lg. dec.	Lg. dec.	Low	Rare	Very Poor	Very Poor			0	42
honeylocust	Gleditsia triacanthos	NSH	Low	11.3	36.0	3.9	Sm. inc.	Lg. inc.	High	Rare	Good	Good	Infill ++	Infill ++	1	43
pitch pine	Pinus rigida	NSH	High	8.5	35.5	4.2	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	44
eastern white pine	Pinus strobus	WDH	High	4.6	35.2	6.8	Sm. dec.	Sm. dec.	Low	Rare	Very Poor	Very Poor			2	45
yellow buckeye	Aesculus flava	NSL	Low	12.1	34.0	2.5	Lg. dec.	Lg. dec.	Low	Rare	Very Poor	Very Poor			0	46
Osage-orange	Maclura pomifera	NDH	Medium	7.5	33.2	5.5	No change	No change	High	Rare	Fair	Fair	Infill +	Infill +	1	47

Current and Potential Future Habitat, Capability, and Migration

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ailanthus	Ailanthus altissima	NSL	FIA	7.8	32.7	3.8	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	48
common persimmon	Diospyros virginiana	NSL	Low	15.1	30.3	2.3	Lg. inc.	Lg. inc.	High	Rare	Good	Good			1	49
Shumard oak	Quercus shumardii	NSL	Low	7.6	30.2	4.4	No change	No change	High	Rare	Fair	Fair	Infill +	Infill +	1	50
cherrybark oak; swamp red o	Quercus pagoda	NSL	Medium	7.4	29.5	5.2	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	2	51
American hornbeam; musclev	Carpinus caroliniana	WSL	Low	17.2	27.4	1.7	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			1	52
eastern hophornbeam; ironw	Ostrya virginiana	WSL	Low	16.2	23.6	1.4	Lg. inc.	Lg. inc.	High	Rare	Good	Good			1	53
shingle oak	Quercus imbricaria	NDH	Medium	6.4	22.3	4.2	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			2	54
Ohio buckeye	Aesculus glabra	NSL	Low	8.3	20.4	2.5	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	55
red mulberry	Morus rubra	NSL	Low	13.3	20.4	1.6	Sm. dec.	Sm. inc.	Medium	Rare	Very Poor	Fair			1	56
cucumbertree	Magnolia acuminata	NSL	Low	9.2	17.3	1.6	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	57
black willow	Salix nigra	NSH	Low	4.9	17.3	5.9	No change	Sm. inc.	Low	Rare	Very Poor	Poor		Infill +	2	58
pin oak	Quercus palustris	NSH	Low	3.8	15.3	5.7	Sm. dec.	Sm. dec.	Low	Rare	Very Poor	Very Poor			2	59
eastern cottonwood	Populus deltoides	NSH	Low	2.7	14.9	5.0	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			2	60
river birch	Betula nigra	NSL	Low	4.5	14.2	3.7	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	1	61
paulownia	Paulownia tomentosa	NSL	FIA	3.2	11.8	3.2	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	62
pawpaw	Asimina triloba	NSL	Low	7.1	11.1	1.2	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	63
serviceberry	Amelanchier spp.	NSL	Low	9.6	10.2	0.9	Sm. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	64
blue ash	Fraxinus quadrangulata	NSL	Low	3.8	8.7	3.7	Sm. dec.	Sm. dec.	Low	Rare	Very Poor	Very Poor			2	65
sugarberry	Celtis laevigata	NDH	Medium	4.2	7.6	2.5	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good	Infill ++	Infill ++	2	66
butternut	Juglans cinerea	NSLX	FIA	2.6	4.9	2.2	Unknown	Unknown	Low	Rare	FIA Only	FIA Only			0	67
bigleaf magnolia	Magnolia macrophylla	NSL	Low	2.5	4.0	1.3	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			2	68
black maple	Acer nigrum	NSH	Low	0.7	3.5	2.6	Sm. dec.	Sm. dec.	High	Rare	Poor	Poor			0	69
swamp white oak	Quercus bicolor	NSL	Low	1.1	2.8	2.5	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	70
mountain or Fraser magnolia	Magnolia fraseri	NSL	Low	1.6	2.4	1.3	Sm. dec.	Sm. dec.	NA	Rare	Unknown	Unknown			0	71
bur oak	Quercus macrocarpa	NDH	Medium	0.6	2.3	1.6	Sm. dec.	Sm. dec.	High	Rare	Poor	Poor			0	72
American holly	Ilex opaca	NSL	Medium	1.6	2.3	1.3	Sm. dec.	No change	Medium	Rare	Very Poor	Poor		Infill +	2	73
pecan	Carya illinoensis	NSH	Low	1.6	2.2	2.0	Lg. inc.	Lg. inc.	Low	Rare	Fair	Fair	Infill +	Infill +	2	74
swamp chestnut oak	Quercus michauxii	NSL	Low	1.4	2.2	2.3	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	2	75
blackjack oak	Quercus marilandica	NSL	Medium	0.8	2.0	1.9	Lg. inc.	Lg. inc.	High	Rare	Good	Good			2	76
white mulberry	Morus alba	NSL	FIA	0.4	1.7	1.8	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	77
bald cypress	Taxodium distichum	NSH	Medium	1.3	1.4	3.9	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	2	78
overcup oak	Quercus lyrata	NSL	Medium	1.5	1.2	2.1	Sm. inc.	Lg. inc.	Low	Rare	Poor	Fair	Infill +	Infill +	2	79
swamp tupelo	Nyssa biflora	NDH	Medium	0.3	1.1	4.0	Sm. dec.	No change	Low	Rare	Very Poor	Very Poor			2	80
bigtooth aspen	Populus grandidentata	NSL	Medium	0.9	1.1	1.2	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	81
willow oak	Quercus phellos	NSL	Low	1.3	0.9	1.5	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			2	82
Kentucky coffeetree	Gymnocladus dioicus	NSLX	FIA	1.1	0.9	1.9	Unknown	Unknown	Medium	Rare	FIA Only	FIA Only			0	83
American chestnut	Castanea dentata	NSLX	FIA	0.9	0.6	0.5	Unknown	Unknown	Medium	Rare	FIA Only	FIA Only			0	84
yellow birch	Betula alleghaniensis	NDL	High	0.4	0.5	0.6	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			2	85
water tupelo	Nyssa aquatica	NSH	Medium	0.2	0.3	5.6	Sm. dec.	Sm. dec.	Low	Rare	Very Poor	Very Poor			0	86
Siberian elm	Ulmus pumila	NDH	FIA	0.2	0.3	1.5	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	87
water elm	Planera aquatica	NSL	Low	0.2	0.3	7.1	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	2	88
water hickory	Carya aquatica	NSL	Medium	0.8	0.2	4.3	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	2	89
northern catalpa	Catalpa speciosa	NSHX	FIA	0.6	0.2	1.5	Unknown	Unknown	Medium	Rare	FIA Only	FIA Only			0	90
mountain maple	Acer spicatum	NSL	Low	0.2	0.2	0.9	No change	No change	High	Rare	Fair	Fair			0	91
rock elm	Ulmus thomasii	NSLX	FIA	0.1	0.1	0.3	Unknown	Unknown	Low	Rare	FIA Only	FIA Only			0	92
water oak	Quercus nigra	WDH	High	0.1	0.1	0.7	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			2	93
black ash	Fraxinus nigra	WSH	Medium	0.1	0.0	0.5	No change	No change	Low	Rare	Very Poor	Very Poor			0	94

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	
chokecherry	Prunus virginiana	NSLX	FIA	0.1	0.0	0.5	Unknown	Unknown	Medium	Rare	FIA Only	FIA Only			0	95	
Norway maple	Acer platanoides	NSL	FIA	0.1	0.0	0.3	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	96	
Atlantic white-cedar	Chamaecyparis thyoides	NSH	Low	0	0	0	Unknown	Unknown	Low	Absent	Unknown	Unknown			0	97	
ashe juniper	Juniperus ashei	NDH	High	0	0	0	New Habitat	New Habitat	NA	Absent	New Habitat	New Habitat			0	98	
red spruce	Picea rubens	NDH	High	0	0	0	Unknown	Unknown	Low	Absent	Unknown	Unknown			0	99	
slash pine	Pinus elliottii	NDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate ++	3	100	
longleaf pine	Pinus palustris	NSH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate +	3	101	
northern white-cedar	Thuja occidentalis	WSH	High	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	102	
florida maple	Acer barbatum	NSL	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat		Migrate +	Migrate +	3	103
striped maple	Acer pensylvanicum	NSL	Medium	0	0	0	Unknown	New Habitat	Medium	Absent	Unknown	New Habitat		Likely +		3	104
cittamwood/gum bumelia	Sideroxylon lanuginosum ssp.	NSL	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat		Migrate +	Migrate ++	3	105
black hickory	Carya texana	NDL	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Likely +	Likely +	3	106
silverbell	Halesia spp.	NSL	Low	0	0	0	New Habitat	Unknown	Medium	Absent	New Habitat	Unknown				3	107
southern magnolia	Magnolia grandiflora	NSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate +		3	108
quaking aspen	Populus tremuloides	WDH	High	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown				0	109
pin cherry	Prunus pensylvanica	NSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Likely +	Likely +	3	110
laurel oak	Quercus laurifolia	NDH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate +		3	111
Nuttall oak	Quercus texana	NSH	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat				0	112
live oak	Quercus virginiana	NDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat				3	113
bluejack oak	Quercus incana	NSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate +		3	114
American mountain-ash	Sorbus americana	NSL	Low	0	0	0	Unknown	Unknown	Low	Absent	Unknown	Unknown				0	115
cedar elm	Ulmus crassifolia	NDH	Medium	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat				3	116