

Area of Region    sq. km    sq. mi    FIA Plots  
8,300.0    3,204.6    201

### 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	Scenario	Scenario	Scenario	SHIFT	SHIFT				
				High	20	24	Increase	25	25	Very Good	13	11	Likely	5	5
Ash	2			Medium	25	42	No Change	15	14	Good	14	15	Infill	4	4
Hickory	4			Low	33	14	Decrease	11	12	Fair	5	7	Migrate	6	11
Maple	3	Abundant	5	FIA	5		New	17	19	Poor	11	10			
Oak	7	Common	27				Unknown	15	13	Very Poor	8	8			
Pine	3	Rare	24							FIA Only	2	2			
Other	37	Absent	26							Unknown	10	8			
	<b>56</b>		<b>82</b>		<b>83</b>	<b>80</b>		<b>83</b>	<b>83</b>		<b>63</b>	<b>61</b>		<b>15</b>	<b>20</b>

### Potential Changes in Climate Variables

#### Temperature (°F)

Scenario	2009	2039	2069	2099	
Annual	51.8	53.7	55.9	56.1	
Average	51.8	54.1	56.5	59.6	
GFDL45	51.8	54.5	57.3	58.2	
GFDL85	51.8	55.0	58.5	62.4	
HAD45	51.8	54.3	57.6	58.9	
HAD85	51.8	54.6	58.8	63.1	
Growing Season	66.4	68.4	70.5	71.1	
May—Sep	66.4	69.6	73.1	74.4	
GFDL45	66.4	69.6	74.6	79.0	
GFDL85	66.4	70.5	74.6	79.0	
HAD45	66.4	69.6	72.8	74.4	
HAD85	66.4	69.8	75.4	79.9	
Coldest Month	29.1	31.1	32.3	32.8	
Average	29.1	31.9	32.9	34.2	
GFDL45	29.1	32.7	33.2	33.9	
GFDL85	29.1	31.7	32.6	33.8	
HAD45	29.1	29.8	31.9	32.1	
HAD85	29.1	30.5	32.0	33.7	
Warmest Month	71.6	73.7	74.9	75.2	
Average	71.6	73.9	75.6	77.5	
GFDL45	71.6	75.2	77.1	78.1	
GFDL85	71.6	76.6	79.1	81.6	
HAD45	71.6	75.2	77.6	78.7	
HAD85	71.6	76.3	80.1	82.9	

#### Precipitation (in)

Scenario	2009	2039	2069	2099	
Annual	44.8	48.0	49.6	50.0	
Total	44.8	49.2	50.3	54.8	
GFDL45	44.8	48.9	50.1	53.0	
GFDL85	44.8	46.5	51.4	52.6	
HAD45	44.8	46.1	46.5	46.0	
HAD85	44.8	46.9	44.8	46.5	
Growing Season	21.3	23.6	24.3	24.3	
May—Sep	21.3	23.8	23.0	25.3	
GFDL45	21.3	23.3	23.0	24.4	
GFDL85	21.3	21.4	22.9	23.3	
HAD45	21.3	22.5	20.8	21.2	
HAD85	21.3	22.2	20.4	21.2	

**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-DGP30 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	80.7	1132.8	14.0	No change	Sm. dec.	High	Abundant	Very Good	Good			1	1
red maple	Acer rubrum	WDH	High	78.3	964.9	12.3	No change	Sm. dec.	High	Abundant	Very Good	Good			1	2
sugar maple	Acer saccharum	WDH	High	78.3	743.9	9.5	No change	Sm. dec.	High	Abundant	Very Good	Good			1	3
chestnut oak	Quercus prinus	NDH	High	57.8	614.7	10.6	Sm. inc.	Sm. inc.	High	Abundant	Very Good	Very Good			1	4
white oak	Quercus alba	WDH	Medium	62.7	593.7	9.5	Sm. inc.	Sm. inc.	High	Abundant	Very Good	Very Good			1	5
northern red oak	Quercus rubra	WDH	Medium	66.3	478.0	7.2	Sm. inc.	Sm. inc.	High	Common	Very Good	Very Good			1	6
black locust	Robinia pseudoacacia	NDH	Low	66.3	470.7	7.1	No change	No change	Medium	Common	Fair	Fair			1	7
American beech	Fagus grandifolia	WDH	High	57.8	372.3	6.4	Sm. inc.	No change	Medium	Common	Good	Fair			1	8
black cherry	Prunus serotina	WDL	Medium	49.4	315.9	6.4	Sm. dec.	No change	Low	Common	Poor	Poor			0	9
black oak	Quercus velutina	WDH	High	49.4	313.3	6.3	Sm. inc.	Lg. inc.	Medium	Common	Good	Very Good			1	10
white ash	Fraxinus americana	WDL	Medium	56.6	271.6	4.8	No change	No change	Low	Common	Poor	Poor			0	11
eastern hemlock	Tsuga canadensis	NSH	High	31.3	251.0	8.0	No change	No change	Low	Common	Poor	Poor			0	12
scarlet oak	Quercus coccinea	WDL	Medium	42.2	247.9	5.9	Sm. inc.	Sm. inc.	Medium	Common	Good	Good			1	13
sweet birch	Betula lenta	NDH	High	48.2	231.3	4.8	No change	Sm. dec.	Low	Common	Poor	Poor			0	14
sourwood	Oxydendrum arboreum	NDL	High	53	207.7	3.9	Sm. inc.	No change	High	Common	Very Good	Good			1	15
Virginia pine	Pinus virginiana	NDH	High	13.3	180.7	13.6	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good			1	16
pignut hickory	Carya glabra	WDL	Medium	47	180.3	3.8	Sm. inc.	Sm. inc.	Medium	Common	Good	Good			1	17
eastern white pine	Pinus strobus	WDH	High	20.5	166.8	8.1	Lg. inc.	Sm. inc.	Low	Common	Good	Fair			1	18
yellow buckeye	Aesculus flava	NSL	Low	26.5	164.7	6.2	Sm. dec.	Lg. dec.	Low	Common	Poor	Very Poor			0	19
American basswood	Tilia americana	WSL	Medium	34.9	162.1	4.6	Sm. inc.	No change	Medium	Common	Good	Fair			1	20
cucumbertree	Magnolia acuminata	NSL	Low	39.8	114.4	2.9	No change	No change	Medium	Common	Fair	Fair			1	21
shagbark hickory	Carya ovata	WSL	Medium	31.3	109.1	3.5	Sm. inc.	Sm. inc.	Medium	Common	Good	Good			1	22
mockernut hickory	Carya alba	WDL	Medium	34.9	102.1	2.9	Lg. inc.	Lg. inc.	High	Common	Very Good	Very Good			1	23
blackgum	Nyssa sylvatica	WDL	Medium	45.8	99.3	2.2	Lg. inc.	Lg. inc.	High	Common	Very Good	Very Good			1	24
eastern redcedar	Juniperus virginiana	WDH	Medium	7.2	83.7	11.6	Sm. inc.	Lg. inc.	Medium	Common	Good	Very Good	Infill ++	Infill ++	1	25
sycamore	Platanus occidentalis	NSL	Low	13.3	79.2	6.0	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good			1	26
sassafras	Sassafras albidum	WSL	Low	30.1	63.4	2.1	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good			1	27
bitternut hickory	Carya cordiformis	WSL	Low	21.7	63.1	2.9	Sm. inc.	Lg. inc.	High	Common	Very Good	Very Good			1	28
slippery elm	Ulmus rubra	WSL	Low	18.1	61.3	3.4	No change	Sm. inc.	Medium	Common	Fair	Good			1	29
ailanthus	Ailanthus altissima	NSL	FIA	9.6	60.1	6.2	Unknown	Unknown	NA	Common	NNIS	NNIS			0	30
American elm	Ulmus americana	WDH	Medium	7.2	58.2	8.1	No change	No change	Medium	Common	Fair	Fair	Infill +	Infill +	1	31
yellow birch	Betula alleghaniensis	NDL	High	8.4	52.7	6.3	Sm. dec.	Sm. dec.	Medium	Common	Poor	Poor			0	32
mountain or Fraser magnolia	Magnolia fraseri	NSL	Low	20.5	49.1	2.4	Sm. inc.	Sm. inc.	Low	Rare	Poor	Poor			0	33
black walnut	Juglans nigra	WDH	Low	12	43.5	3.6	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			1	34
American hornbeam; musclev	Carpinus caroliniana	WSL	Low	18.1	41.2	2.3	Sm. dec.	Sm. inc.	Medium	Rare	Very Poor	Fair			1	35
serviceberry	Amelanchier spp.	NSL	Low	25.3	38.0	1.5	No change	No change	Medium	Rare	Poor	Poor			1	36
paulownia	Paulownia tomentosa	NSL	FIA	7.2	34.9	4.8	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	37
chinkapin oak	Quercus muehlenbergii	NSL	Medium	3.6	31.3	8.7	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	2	38
flowering dogwood	Cornus florida	WDL	Medium	20.5	30.8	1.5	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			1	39
butternut	Juglans cinerea	NSLX	FIA	7.2	30.5	4.2	Unknown	Unknown	Low	Rare	FIA Only	FIA Only			0	40
eastern hophornbeam; ironw	Ostrya virginiana	WSL	Low	20.5	26.4	1.3	Sm. inc.	Lg. inc.	High	Rare	Good	Good			1	41
pitch pine	Pinus rigida	NSH	High	4.8	23.7	4.9	No change	No change	Medium	Rare	Poor	Poor			1	42
striped maple	Acer pensylvanicum	NSL	Medium	10.8	19.3	1.8	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	43
post oak	Quercus stellata	WDH	High	3.6	17.9	5.0	Lg. inc.	Lg. inc.	High	Rare	Good	Good			2	44
pin cherry	Prunus pensylvanica	NSL	Low	8.4	15.1	1.8	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	45
Norway spruce	Picea abies	NSH	FIA	2.4	14.7	6.1	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	46
pawpaw	Asimina triloba	NSL	Low	3.6	9.9	2.7	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	47

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eastern redbud	<i>Cercis canadensis</i>	NSL	Low	7.2	8.6	1.2	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			1	48
bigtooth aspen	<i>Populus grandidentata</i>	NSL	Medium	2.4	5.3	2.2	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	49
black willow	<i>Salix nigra</i>	NSH	Low	2.4	5.0	2.1	Sm. dec.	No change	Low	Rare	Very Poor	Very Poor			2	50
American holly	<i>Ilex opaca</i>	NSL	Medium	2.4	2.5	1.0	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	51
hackberry	<i>Celtis occidentalis</i>	WDH	Medium	1.2	2.4	2.0	No change	Lg. inc.	High	Rare	Fair	Good			2	52
American chestnut	<i>Castanea dentata</i>	NSLX	FIA	2.4	1.2	0.5	Unknown	Unknown	Medium	Rare	FIA Only	FIA Only			0	53
river birch	<i>Betula nigra</i>	NSL	Low	1.2	0.9	0.8	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	2	54
black ash	<i>Fraxinus nigra</i>	WSH	Medium	1.2	0.8	0.7	Lg. dec.	Lg. dec.	Low	Rare	Very Poor	Very Poor			0	55
sweetgum	<i>Liquidambar styraciflua</i>	WDH	High	1.2	0.8	0.7	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			2	56
Atlantic white-cedar	<i>Chamaecyparis thyoides</i>	NSH	Low	0	0	0	Unknown	Unknown	Low	Absent	Unknown	Unknown			0	57
shortleaf pine	<i>Pinus echinata</i>	WDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Likely +	Likely +	3	58
Table Mountain pine	<i>Pinus pungens</i>	NSL	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Likely +	Likely +	3	59
loblolly pine	<i>Pinus taeda</i>	WDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate ++	Migrate ++	3	60
northern white-cedar	<i>Thuja occidentalis</i>	WSH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	61
florida maple	<i>Acer barbatum</i>	NSL	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	62
boxelder	<i>Acer negundo</i>	WSH	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Likely +	Likely +	3	63
black maple	<i>Acer nigrum</i>	NSH	Low	0	0	0	Unknown	Unknown	High	Absent	Unknown	Unknown			0	64
mountain maple	<i>Acer spicatum</i>	NSL	Low	0	0	0	Unknown	Unknown	High	Absent	Unknown	Unknown			0	65
cittamwood/gum bumelia	<i>Sideroxylon lanuginosum ssp.</i>	NSL	Low	0	0	0	Unknown	New Habitat	High	Absent	Unknown	New Habitat			3	66
pecan	<i>Carya illinoensis</i>	NSH	Low	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat		Migrate +	3	67
shellbark hickory	<i>Carya laciniosa</i>	NSL	Low	0	0	0	Unknown	Unknown	Medium	Modeled	Unknown	Unknown			0	68
black hickory	<i>Carya texana</i>	NDL	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			0	69
sugarberry	<i>Celtis laevigata</i>	NDH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate ++	3	70
common persimmon	<i>Diospyros virginiana</i>	NSL	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Likely +	Likely +	3	71
green ash	<i>Fraxinus pennsylvanica</i>	WSH	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Likely +	Likely +	3	72
honeylocust	<i>Gleditsia triacanthos</i>	NSH	Low	0	0	0	Unknown	New Habitat	High	Absent	Unknown	New Habitat		Migrate +	3	73
bigleaf magnolia	<i>Magnolia macrophylla</i>	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	74
red mulberry	<i>Morus rubra</i>	NSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	75
water tupelo	<i>Nyssa aquatica</i>	NSH	Medium	0	0	0	Unknown	Unknown	Low	Absent	Unknown	Unknown			0	76
southern red oak	<i>Quercus falcata</i>	WDL	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Migrate +	Migrate ++	3	77
overcup oak	<i>Quercus lyrata</i>	NSL	Medium	0	0	0	Unknown	Unknown	Low	Absent	Unknown	Unknown			0	78
blackjack oak	<i>Quercus marilandica</i>	NSL	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Migrate +	Migrate ++	3	79
water oak	<i>Quercus nigra</i>	WDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate +	3	80
Shumard oak	<i>Quercus shumardii</i>	NSL	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat		Migrate +	3	81
bluejack oak	<i>Quercus incana</i>	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	82
winged elm	<i>Ulmus alata</i>	WDL	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +	Migrate ++	3	83