

	sq. km	sq. mi	FIA Plots
Area of Region	17,717	6,840.6	680

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	2			High	23	26	Increase	28	34	Very Good	12	10	Likely	2	2
Hickory	4			Medium	32	53	No Change	14	8	Good	14	18	Infill	9	8
Maple	6	Abundant	8	Low	38	17	Decrease	19	19	Fair	13	15	Migrate	4	13
Oak	9	Common	22	FIA	7		New	15	21	Poor	10	7			
Pine	7	Rare	38				Unknown	24	18	Very Poor	9	9			
Other	40	Absent	31							FIA Only	3	3			
	68		99		100	96		100	100	Unknown	17	11			
											78	73			

Potential Changes in Climate Variables

Temperature (°F)

Scenario	2009	2039	2069	2099		
Annual	CCSM45	48.9	50.8	53.1	53.3	
Average	CCSM85	48.9	51.2	53.7	56.8	
	GFDL45	48.9	51.6	54.6	55.5	
	GFDL85	48.9	52.2	55.7	59.7	
	HAD45	48.9	51.5	54.9	56.2	
	HAD85	48.9	51.8	56.0	60.5	
Growing Season	CCSM45	63.8	65.8	67.9	68.5	
	CCSM85	63.8	66.2	68.8	72.8	
May—Sep	GFDL45	63.8	67.0	70.7	72.1	
	GFDL85	63.8	68.1	72.2	76.6	
	HAD45	63.8	67.0	70.3	72.0	
	HAD85	63.8	67.1	72.5	77.4	
Coldest Month	CCSM45	25.9	27.8	29.2	29.7	
	CCSM85	25.9	28.5	29.7	31.0	
Average	GFDL45	25.9	29.2	29.8	30.5	
	GFDL85	25.9	28.6	29.6	30.8	
	HAD45	25.9	26.8	29.0	29.1	
	HAD85	25.9	27.4	29.1	30.9	
Warmest Month	CCSM45	69.0	71.2	72.4	72.7	
	CCSM85	69.0	71.4	73.2	75.1	
Average	GFDL45	69.0	72.5	74.6	75.8	
	GFDL85	69.0	74.0	76.5	79.2	
	HAD45	69.0	72.7	75.1	76.2	
	HAD85	69.0	73.6	77.1	80.3	

Precipitation (in)

Scenario	2009	2039	2069	2099		
Annual	CCSM45	49.1	52.8	53.6	54.5	
Total	CCSM85	49.1	53.2	54.7	59.7	
	GFDL45	49.1	53.9	55.1	57.1	
	GFDL85	49.1	50.7	56.4	57.8	
	HAD45	49.1	51.3	51.7	51.3	
	HAD85	49.1	52.6	49.8	52.0	
Growing Season	CCSM45	22.8	25.3	25.6	25.6	
	CCSM85	22.8	25.0	24.7	26.7	
May—Sep	GFDL45	22.8	24.6	24.2	25.0	
	GFDL85	22.8	22.5	24.1	24.5	
	HAD45	22.8	24.6	22.4	23.0	
	HAD85	22.8	24.1	21.8	22.6	

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.

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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
red maple	Acer rubrum	WDH	High	91	1736.8	12.4	Sm. dec.	Sm. dec.	High	Abundant	Good	Good			1	1
sugar maple	Acer saccharum	WDH	High	85.2	1152.8	9.2	No change	Sm. dec.	High	Abundant	Very Good	Good			1	2
northern red oak	Quercus rubra	WDH	Medium	76.9	843.4	6.8	No change	Sm. inc.	High	Abundant	Very Good	Very Good			1	3
black cherry	Prunus serotina	WDL	Medium	70.5	817.9	7.9	Sm. dec.	Sm. dec.	Low	Abundant	Fair	Fair			0	4
chestnut oak	Quercus prinus	NDH	High	51.8	806.6	8.1	Sm. inc.	Sm. inc.	High	Abundant	Very Good	Very Good			1	5
yellow-poplar	Liriodendron tulipifera	WDH	High	57.7	676.7	7.7	Sm. inc.	Sm. inc.	High	Abundant	Very Good	Very Good			1	6
American beech	Fagus grandifolia	WDH	High	55.3	572.6	7.2	No change	No change	Medium	Abundant	Good	Good			1	7
white oak	Quercus alba	WDH	Medium	48.6	541.5	6.7	Lg. inc.	Lg. inc.	High	Abundant	Very Good	Very Good			1	8
black locust	Robinia pseudoacacia	NDH	Low	62.6	498.2	4.6	No change	No change	Medium	Common	Fair	Fair			1	9
sweet birch	Betula lenta	NDH	High	65.3	449.1	4.7	No change	Sm. dec.	Low	Common	Poor	Poor			0	10
yellow birch	Betula alleghaniensis	NDL	High	38.5	342.4	7.6	Lg. dec.	Lg. dec.	Medium	Common	Poor	Poor			0	11
eastern white pine	Pinus strobus	WDH	High	20.1	289.8	8.2	Sm. inc.	Sm. inc.	Low	Common	Fair	Fair			1	12
eastern hemlock	Tsuga canadensis	NSH	High	40.6	270.2	4.8	Sm. inc.	Sm. inc.	Low	Common	Fair	Fair			1	13
scarlet oak	Quercus coccinea	WDL	Medium	32.8	248.5	4.0	Lg. inc.	Sm. inc.	Medium	Common	Very Good	Good			1	14
American basswood	Tilia americana	WSL	Medium	42.5	245.5	3.4	No change	No change	Medium	Common	Fair	Fair			1	15
black oak	Quercus velutina	WDH	High	35.7	237.8	4.0	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good			1	16
red spruce	Picea rubens	NDH	High	21.7	214.2	8.5	Lg. dec.	Lg. dec.	Low	Common	Very Poor	Very Poor			0	17
white ash	Fraxinus americana	WDL	Medium	53.2	212.0	2.5	Sm. inc.	Sm. inc.	Low	Common	Fair	Fair			1	18
pignut hickory	Carya glabra	WDL	Medium	45.8	192.3	2.1	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good			1	19
shagbark hickory	Carya ovata	WSL	Medium	34	143.3	2.9	Sm. inc.	Sm. inc.	Medium	Common	Good	Good			1	20
sourwood	Oxydendrum arboreum	NDL	High	22.7	133.0	3.2	Lg. inc.	Sm. inc.	High	Common	Very Good	Very Good			1	21
blackgum	Nyssa sylvatica	WDL	Medium	43.5	125.3	1.5	Lg. inc.	Lg. inc.	High	Common	Very Good	Very Good			1	22
sassafras	Sassafras albidum	WSL	Low	33	120.3	2.0	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good			1	23
mockernut hickory	Carya alba	WDL	Medium	31.6	107.7	1.7	Lg. inc.	Lg. inc.	High	Common	Very Good	Very Good			1	24
cucumbertree	Magnolia acuminata	NSL	Low	46.1	93.4	1.4	Sm. inc.	Sm. inc.	Medium	Common	Good	Good			1	25
Virginia pine	Pinus virginiana	NDH	High	7.4	91.8	7.1	Sm. inc.	Sm. inc.	Medium	Common	Good	Good			1	26
pin cherry	Prunus pensylvanica	NSL	Low	21.5	83.5	2.8	Lg. dec.	Lg. dec.	Medium	Common	Poor	Poor			0	27
serviceberry	Amelanchier spp.	NSL	Low	43.1	78.8	1.2	No change	No change	Medium	Common	Fair	Fair			1	28
striped maple	Acer pensylvanicum	NSL	Medium	37.5	73.8	1.4	Sm. dec.	Sm. dec.	Medium	Common	Poor	Poor			0	29
slippery elm	Ulmus rubra	WSL	Low	13.5	58.1	2.3	No change	Sm. inc.	Medium	Common	Fair	Good			1	30
bitternut hickory	Carya cordiformis	WSL	Low	15.3	46.6	2.0	Sm. inc.	Lg. inc.	High	Rare	Good	Good			1	31
sycamore	Platanus occidentalis	NSL	Low	4.6	46.3	3.0	Sm. inc.	Sm. inc.	Medium	Rare	Fair	Fair	Infill +	Infill +	1	32
mountain or Fraser magnolia	Magnolia fraseri	NSL	Low	18.9	44.7	1.7	Lg. inc.	Lg. inc.	Low	Rare	Fair	Fair			0	33
yellow buckeye	Aesculus flava	NSL	Low	6.1	41.3	2.9	No change	No change	Low	Rare	Very Poor	Very Poor			0	34
eastern redcedar	Juniperus virginiana	WDH	Medium	3.6	40.3	10.0	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good	Infill ++	Infill ++	2	35
Norway spruce	Picea abies	NSH	FIA	4.5	38.3	5.7	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	36
black walnut	Juglans nigra	WDH	Low	8.7	34.9	2.1	No change	Sm. inc.	Medium	Rare	Poor	Fair			1	37
American elm	Ulmus americana	WDH	Medium	3.5	34.1	4.8	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	2	38
eastern hophornbeam; ironw	Ostrya virginiana	WSL	Low	22.9	32.9	0.7	Sm. inc.	Lg. inc.	High	Rare	Good	Good			1	39
American hornbeam; muscle	Carpinus caroliniana	WSL	Low	12.6	26.0	1.5	Sm. dec.	Sm. inc.	Medium	Rare	Very Poor	Fair			1	40
red pine	Pinus resinosa	NSH	Medium	3.3	24.8	7.2	Lg. dec.	Lg. dec.	Low	Rare	Very Poor	Very Poor			0	41
bigtooth aspen	Populus grandidentata	NSL	Medium	7.3	24.1	2.7	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	42
pitch pine	Pinus rigida	NSH	High	5.3	16.8	1.4	Sm. inc.	Sm. inc.	Medium	Rare	Fair	Fair			1	43
butternut	Juglans cinerea	NSLX	FIA	2.4	16.0	3.2	Unknown	Unknown	Low	Rare	FIA Only	FIA Only			0	44
chinkapin oak	Quercus muehlenbergii	NSL	Medium	2	15.7	6.3	No change	Sm. inc.	Medium	Rare	Poor	Fair	Infill +	Infill +	2	45
quaking aspen	Populus tremuloides	WDH	High	0.5	15.4	22.5	Very Lg. dec.	Lg. dec.	Medium	Rare	Lost	Very Poor			0	46
ailanthus	Ailanthus altissima	NSL	FIA	3.6	12.5	2.2	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	47

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
flowering dogwood	Cornus florida	WDL	Medium	10.2	12.3	0.7	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			1	48
Table Mountain pine	Pinus pungens	NSL	Low	3.1	12.0	2.1	No change	No change	High	Rare	Fair	Fair	Infill +	Infill +	1	49
boxelder	Acer negundo	WSH	Low	0.2	8.9	4.4	Sm. dec.	No change	High	Rare	Poor	Fair	Infill +	Infill +	2	50
post oak	Quercus stellata	WDH	High	1.5	8.4	4.6	Lg. inc.	Lg. inc.	High	Rare	Good	Good			2	51
shortleaf pine	Pinus echinata	WDH	High	3	6.9	1.3	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good	Infill ++	Infill ++	2	52
American chestnut	Castanea dentata	NSLX	FIA	5.4	5.2	0.6	Unknown	Unknown	Medium	Rare	FIA Only	FIA Only			0	53
hackberry	Celtis occidentalis	WDH	Medium	0.9	4.3	1.2	No change	Sm. inc.	High	Rare	Fair	Good	Infill +		2	54
black maple	Acer nigrum	NSH	Low	0.9	3.7	1.6	Lg. dec.	Lg. dec.	High	Rare	Poor	Poor			0	55
green ash	Fraxinus pennsylvanica	WSH	Low	1.3	3.6	1.3	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			2	56
Scots pine	Pinus sylvestris	NSH	FIA	1.1	3.4	3.0	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	57
eastern redbud	Cercis canadensis	NSL	Low	2.2	3.2	1.4	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good	Infill ++	Infill ++	1	58
balsam fir	Abies balsamea	NDH	High	0.6	3.0	5.4	Very Lg. dec.	Very Lg. dec.	Low	Rare	Lost	Lost			0	59
wild plum	Prunus americana	NSLX	FIA	0.1	3.0	1.4	Unknown	Unknown	Medium	Rare	FIA Only	FIA Only			0	60
American mountain-ash	Sorbus americana	NSL	Low	4.5	3.0	0.7	Lg. dec.	Lg. dec.	Low	Rare	Very Poor	Very Poor			0	61
paulownia	Paulownia tomentosa	NSL	FIA	0.2	2.7	1.4	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	62
American holly	Ilex opaca	NSL	Medium	1.2	2.0	0.8	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	63
pawpaw	Asimina triloba	NSL	Low	1.1	1.8	1.5	Sm. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	64
southern red oak	Quercus falcata	WDL	Medium	0	1.2	0.1	Lg. inc.	Lg. inc.	High	Rare	Good	Good			2	65
mountain maple	Acer spicatum	NSL	Low	2.8	1.1	0.4	Sm. dec.	Sm. dec.	High	Rare	Poor	Poor			1	66
Ohio buckeye	Aesculus glabra	NSL	Low	0.6	0.7	1.3	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	67
shingle oak	Quercus imbricaria	NDH	Medium	0.4	0.5	0.5	Very Lg. dec.	Very Lg. dec.	Medium	Rare	Lost	Lost			0	68
Atlantic white-cedar	Chamaecyparis thyoides	NSH	Low	0	0	0	Unknown	Unknown	Low	Absent	Unknown	Unknown			0	69
longleaf pine	Pinus palustris	NSH	Medium	0	0	0	Unknown	New Habitat	Medium	Absent	Unknown	New Habitat		Migrate +	3	70
loblolly pine	Pinus taeda	WDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Likely +	Likely +	3	71
northern white-cedar	Thuja occidentalis	WSH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	72
florida maple	Acer barbatum	NSL	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	73
river birch	Betula nigra	NSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate +	3	74
gray birch	Betula populifolia	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	75
cittamwood/gum bumelia	Sideroxylon lanuginosum ssp.	NSL	Low	0	0	0	Unknown	New Habitat	High	Absent	Unknown	New Habitat			0	76
water hickory	Carya aquatica	NSL	Medium	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	77
pecan	Carya illinoensis	NSH	Low	0	0	0	Unknown	New Habitat	Low	Absent	Unknown	New Habitat		Migrate +	3	78
shellbark hickory	Carya laciniosa	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	79
black hickory	Carya texana	NDL	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			0	80
sugarberry	Celtis laevigata	NDH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate ++	3	81
common persimmon	Diospyros virginiana	NSL	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Likely +	Likely +	3	82
black ash	Fraxinus nigra	WSH	Medium	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat			3	83
honeylocust	Gleditsia triacanthos	NSH	Low	0	0	0	Unknown	New Habitat	High	Absent	Unknown	New Habitat		Migrate +	3	84
silverbell	Halesia spp.	NSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	85
sweetgum	Liquidambar styraciflua	WDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +	Migrate ++	3	86
Osage-orange	Maclura pomifera	NDH	Medium	0	0	0	Unknown	New Habitat	High	Absent	Unknown	New Habitat		Migrate +	3	87
southern magnolia	Magnolia grandiflora	NSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	88
bigleaf magnolia	Magnolia macrophylla	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	89
red mulberry	Morus rubra	NSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	90
water tupelo	Nyssa aquatica	NSH	Medium	0	0	0	Unknown	Unknown	Low	Absent	Unknown	Unknown			0	91
eastern cottonwood	Populus deltoides	NSH	Low	0	0	0	Unknown	Unknown	Medium	Modeled	Unknown	Unknown			0	92
cherrybark oak; swamp red o	Quercus pagoda	NSL	Medium	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	93
overcup oak	Quercus lyrata	NSL	Medium	0	0	0	Unknown	Unknown	Low	Absent	Unknown	Unknown			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
bur oak	Quercus macrocarpa	NDH	Medium	0	0	0	Unknown	Unknown	High	Absent	Unknown	Unknown			0	95
blackjack oak	Quercus marilandica	NSL	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat		Migrate ++	3	96
water oak	Quercus nigra	WDH	High	0	0	0	Unknown	New Habitat	Medium	Absent	Unknown	New Habitat		Migrate +	3	97
Shumard oak	Quercus shumardii	NSL	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat		Migrate +	3	98
bluejack oak	Quercus incana	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	99
winged elm	Ulmus alata	WDL	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +	Migrate ++	3	100