

Area of Region    sq. km    sq. mi    FIA Plots  
145,296    56,099    6,321

**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	3			High	23	25	Increase	18	21	Very Good	8	7	Likely	0	0
Hickory	2			Medium	31	53	No Change	18	12	Good	11	12	Infill	22	22
Maple	7	Abundant	3	Low	36	17	Decrease	18	21	Fair	11	13	Migrate	10	11
Oak	8	Common	30	FIA	11		New	24	29	Poor	15	13			
Pine	4	Rare	32				Unknown	23	18	Very Poor	9	8			
Other	41	Absent	35							FIA Only	6	6			
	65		100		101	95		101	101	Unknown	12	7			
											72	66			

**Potential Changes in Climate Variables**

**Temperature (°F)**

Scenario	2009	2039	2069	2099		
Annual	CCSM45	43.8	45.6	48.7	48.7	
Average	CCSM85	43.8	46.4	49.4	52.9	
	GFDL45	43.8	47.2	49.5	50.9	
	GFDL85	43.8	47.1	50.7	55.7	
	HAD45	43.8	46.9	50.4	52.3	
	HAD85	43.8	47.4	51.7	57.2	
Growing Season	CCSM45	63.2	65.2	67.7	68.0	
	CCSM85	63.2	66.0	68.7	72.7	
May—Sep	GFDL45	63.2	67.3	70.2	72.3	
	GFDL85	63.2	67.4	71.5	77.3	
	HAD45	63.2	66.5	69.1	71.3	
	HAD85	63.2	66.4	70.9	76.4	
Coldest Month	CCSM45	12.8	14.4	17.1	17.3	
	CCSM85	12.8	15.0	17.2	19.6	
Average	GFDL45	12.8	16.1	17.9	18.3	
	GFDL85	12.8	16.8	18.4	21.1	
	HAD45	12.8	14.3	18.5	18.5	
	HAD85	12.8	17.6	20.8	24.5	
Warmest Month	CCSM45	69.5	71.8	73.3	73.8	
	CCSM85	69.5	72.9	74.7	77.1	
Average	GFDL45	69.5	73.1	74.7	76.3	
	GFDL85	69.5	74.0	76.2	79.6	
	HAD45	69.5	72.9	74.3	75.9	
	HAD85	69.5	73.7	76.1	79.9	

**Precipitation (in)**

Scenario	2009	2039	2069	2099		
Annual	CCSM45	32.4	32.9	32.5	32.9	
Total	CCSM85	32.4	32.3	32.7	33.0	
	GFDL45	32.4	35.1	37.6	36.0	
	GFDL85	32.4	35.6	38.7	37.9	
	HAD45	32.4	33.6	34.4	34.6	
	HAD85	32.4	33.9	34.2	36.2	
Growing Season	CCSM45	19.3	19.3	18.5	19.2	
	CCSM85	19.3	19.0	18.8	17.9	
May—Sep	GFDL45	19.3	20.4	21.6	20.2	
	GFDL85	19.3	21.0	21.5	20.0	
	HAD45	19.3	19.1	18.1	18.4	
	HAD85	19.3	19.0	17.0	17.3	

**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.

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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
quaking aspen	Populus tremuloides	WDH	High	65.3	873.1	13.0	Sm. dec.	Sm. dec.	Medium	Abundant	Fair	Fair			0	1
red maple	Acer rubrum	WDH	High	67.3	821.9	12.0	No change	Sm. dec.	High	Abundant	Very Good	Good			1	2
sugar maple	Acer saccharum	WDH	High	50.5	608.4	11.8	No change	No change	High	Abundant	Very Good	Very Good			1	3
red pine	Pinus resinosa	NSH	Medium	32	409.0	12.8	No change	Sm. dec.	Low	Common	Poor	Poor			0	4
eastern white pine	Pinus strobus	WDH	High	43.6	396.2	9.3	No change	Sm. dec.	Low	Common	Poor	Poor			0	5
American elm	Ulmus americana	WDH	Medium	63.9	395.7	6.5	Sm. inc.	Sm. inc.	Medium	Common	Good	Good			1	6
northern red oak	Quercus rubra	WDH	Medium	54.3	394.0	7.2	Sm. inc.	No change	High	Common	Very Good	Good			1	7
American basswood	Tilia americana	WSL	Medium	52.7	304.1	5.8	No change	No change	Medium	Common	Fair	Fair			1	8
black cherry	Prunus serotina	WDL	Medium	67.8	299.0	4.8	Sm. inc.	Sm. inc.	Low	Common	Fair	Fair			1	9
paper birch	Betula papyrifera	WDH	High	54.7	274.8	4.7	No change	No change	Medium	Common	Fair	Fair			1	10
balsam fir	Abies balsamea	NDH	High	33.3	269.6	7.5	Lg. dec.	Lg. dec.	Low	Common	Very Poor	Very Poor			0	11
green ash	Fraxinus pennsylvanica	WSH	Low	38.3	263.3	7.6	Sm. inc.	Sm. inc.	Medium	Common	Good	Good			1	12
black ash	Fraxinus nigra	WSH	Medium	43.2	262.3	5.8	Sm. dec.	Sm. dec.	Low	Common	Poor	Poor			0	13
boxelder	Acer negundo	WSH	Low	28.7	255.4	10.3	No change	No change	High	Common	Good	Good			1	14
white oak	Quercus alba	WDH	Medium	36.9	236.2	7.0	Lg. inc.	Lg. inc.	High	Common	Very Good	Very Good	Infill ++	Infill ++	1	15
northern pin oak	Quercus ellipsoidalis	NSH	Medium	27.7	229.1	8.1	No change	No change	High	Common	Good	Good			1	16
northern white-cedar	Thuja occidentalis	WSH	High	20.4	195.8	9.2	No change	No change	Medium	Common	Fair	Fair	Infill +	Infill +	1	17
bur oak	Quercus macrocarpa	NDH	Medium	33.7	192.8	6.6	Sm. inc.	Sm. inc.	High	Common	Very Good	Very Good	Infill ++	Infill ++	1	18
bigtooth aspen	Populus grandidentata	NSL	Medium	36.8	191.8	4.9	No change	Sm. dec.	Medium	Common	Fair	Poor			1	19
black oak	Quercus velutina	WDH	High	18.1	182.1	10.3	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good	Infill ++	Infill ++	1	20
tamarack (native)	Larix laricina	NSH	High	24	178.8	7.2	No change	No change	Low	Common	Poor	Poor			0	21
white ash	Fraxinus americana	WDL	Medium	41.7	169.2	4.4	Sm. inc.	Sm. inc.	Low	Common	Fair	Fair			1	22
jack pine	Pinus banksiana	NSH	Medium	15.7	166.1	10.3	Sm. dec.	Sm. dec.	High	Common	Fair	Fair	Infill +	Infill +	1	23
black spruce	Picea mariana	NSH	High	19.4	125.8	5.9	Lg. dec.	Lg. dec.	Medium	Common	Poor	Poor	Infill +	Infill +	0	24
silver maple	Acer saccharinum	NSH	Low	9.9	115.2	10.9	No change	No change	High	Common	Good	Good	Infill ++	Infill ++	1	25
white spruce	Picea glauca	NSL	Medium	25.7	103.6	3.8	Sm. dec.	Sm. dec.	Medium	Common	Poor	Poor			0	26
shagbark hickory	Carya ovata	WSL	Medium	18.6	99.5	6.5	Sm. inc.	Sm. inc.	Medium	Common	Good	Good	Infill ++	Infill ++	1	27
eastern hophornbeam; ironw	Ostrya virginiana	WSL	Low	39.3	90.7	2.3	Sm. inc.	Sm. inc.	High	Common	Very Good	Very Good			1	28
black walnut	Juglans nigra	WDL	Low	10.5	87.6	9.0	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good	Infill ++	Infill ++	1	29
yellow birch	Betula alleghaniensis	NDL	High	29.5	84.8	2.8	Sm. dec.	Sm. dec.	Medium	Common	Poor	Poor			0	30
bitternut hickory	Carya cordiformis	WSL	Low	22.1	84.0	4.1	No change	Sm. inc.	High	Common	Good	Very Good	Infill ++	Infill ++	1	31
eastern hemlock	Tsuga canadensis	NSH	High	18.7	82.4	4.2	Sm. dec.	Sm. dec.	Low	Common	Poor	Poor	Infill +	Infill +	0	32
slippery elm	Ulmus rubra	WSL	Low	18.9	58.1	3.3	Sm. inc.	Sm. inc.	Medium	Common	Good	Good	Infill ++	Infill ++	1	33
eastern redcedar	Juniperus virginiana	WDH	Medium	7.4	42.5	6.5	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good	Infill ++	Infill ++	2	34
black willow	Salix nigra	NSH	Low	5	39.9	13.4	Sm. dec.	No change	Low	Rare	Very Poor	Very Poor			2	35
black locust	Robinia pseudoacacia	NDH	Low	3.6	38.8	12.3	Sm. inc.	Sm. inc.	Medium	Rare	Fair	Fair	Infill +	Infill +	2	36
Scots pine	Pinus sylvestris	NSH	FIA	3.7	32.3	9.2	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	37
eastern cottonwood	Populus deltoides	NSH	Low	4.9	29.8	6.2	No change	Sm. inc.	Medium	Rare	Poor	Fair	Infill +	Infill +	2	38
hackberry	Celtis occidentalis	WDH	Medium	7.7	27.6	3.1	Sm. inc.	Sm. inc.	High	Rare	Good	Good	Infill ++	Infill ++	2	39
red mulberry	Morus rubra	NSL	Low	4.1	20.6	6.2	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	2	40
American hornbeam; muscle	Carpinus caroliniana	WSL	Low	16.6	18.6	1.2	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	41
American beech	Fagus grandifolia	WDH	High	4.1	15.8	4.5	No change	Sm. inc.	Medium	Rare	Poor	Fair	Infill +	Infill +	2	42
balsam poplar	Populus balsamifera	NSH	Medium	4.9	15.1	2.0	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			2	43
butternut	Juglans cinerea	NSLX	FIA	5.1	14.0	2.4	Unknown	Unknown	Low	Rare	FIA Only	FIA Only			0	44
swamp white oak	Quercus bicolor	NSL	Low	3.7	13.1	3.9	No change	Sm. inc.	Medium	Rare	Poor	Fair	Infill +	Infill +	2	45
river birch	Betula nigra	NSL	Low	1.5	13.1	7.5	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			2	46
Siberian elm	Ulmus pumila	NDH	FIA	1.3	12.8	10.4	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	47

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chokecherry	Prunus virginiana	NSLX	FIA	10.9	9.9	0.9	Unknown	Unknown	Medium	Rare	FIA Only	FIA Only			0	48
serviceberry	Amelanchier spp.	NSL	Low	11.4	9.8	0.8	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	49
Norway spruce	Picea abies	NSH	FIA	2.2	8.6	7.4	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	50
white mulberry	Morus alba	NSL	FIA	2.1	7.9	4.8	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	51
pin cherry	Prunus pensylvanica	NSL	Low	7.3	6.2	0.9	Lg. dec.	Very Lg. dec.	Medium	Rare	Very Poor	Lost			0	52
peachleaf willow	Salix amygdaloides	NSLX	FIA	1.2	3.4	3.2	Unknown	Unknown	Medium	Rare	FIA Only	FIA Only			0	53
black maple	Acer nigrum	NSH	Low	0.4	3.0	4.1	Sm. dec.	Lg. dec.	High	Rare	Poor	Poor			0	54
chinkapin oak	Quercus muehlenbergii	NSL	Medium	0.2	2.8	3.4	Sm. inc.	Sm. inc.	Medium	Rare	Fair	Fair	Infill +	Infill +	2	55
wild plum	Prunus americana	NSLX	FIA	0.9	2.7	3.0	Unknown	Unknown	Medium	Rare	FIA Only	FIA Only			0	56
honeylocust	Gleditsia triacanthos	NSH	Low	0.6	2.4	4.7	Lg. inc.	Lg. inc.	High	Rare	Good	Good			2	57
rock elm	Ulmus thomasii	NSLX	FIA	1.4	1.8	1.6	Unknown	Unknown	Low	Rare	FIA Only	FIA Only			0	58
Ohio buckeye	Aesculus glabra	NSL	Low	0.1	0.7	10.4	No change	Sm. dec.	Medium	Rare	Poor	Very Poor	Infill +		2	59
mountain maple	Acer spicatum	NSL	Low	1.2	0.5	0.3	Lg. dec.	Lg. dec.	High	Rare	Poor	Poor			0	60
Norway maple	Acer platanoides	NSL	FIA	0.1	0.3	4.6	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	61
American mountain-ash	Sorbus americana	NSL	Low	0.1	0.3	0.4	Lg. dec.	Lg. dec.	Low	Rare	Very Poor	Very Poor			0	62
flowering dogwood	Cornus florida	WDL	Medium	0.1	0.2	3.0	Sm. dec.	No change	Medium	Rare	Very Poor	Poor		Infill +	2	63
pin oak	Quercus palustris	NSH	Low	0	0.2	0.6	Lg. inc.	Lg. inc.	Low	Rare	Fair	Fair	Infill +	Infill +	2	64
northern catalpa	Catalpa speciosa	NSHX	FIA	0.1	0.2	2.2	Unknown	Unknown	Medium	Rare	FIA Only	FIA Only			0	65
red spruce	Picea rubens	NDH	High	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat			0	66
shortleaf pine	Pinus echinata	WDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	67
slash pine	Pinus elliotii	NDH	High	0	0	0	Unknown	New Habitat	Medium	Absent	Unknown	New Habitat			0	68
loblolly pine	Pinus taeda	WDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	69
Virginia pine	Pinus virginiana	NDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	70
florida maple	Acer barbatum	NSL	Low	0	0	0	Unknown	Unknown	High	Absent	Unknown	Unknown			0	71
striped maple	Acer pensylvanicum	NSL	Medium	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	72
sweet birch	Betula lenta	NDH	High	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat			0	73
cittamwood/gum bumelia	Sideroxylon lanuginosum ssp.	NSL	Low	0	0	0	Unknown	New Habitat	High	Absent	Unknown	New Habitat			3	74
pignut hickory	Carya glabra	WDL	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	75
pecan	Carya illinoensis	NSH	Low	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat			3	76
shellbark hickory	Carya laciniosa	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	77
black hickory	Carya texana	NDL	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	78
mockernut hickory	Carya alba	WDL	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	79
sugarberry	Celtis laevigata	NDH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	80
eastern redbud	Cercis canadensis	NSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			0	81
common persimmon	Diospyros virginiana	NSL	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat		Migrate +	3	82
blue ash	Fraxinus quadrangulata	NSL	Low	0	0	0	Unknown	Unknown	Low	Absent	Unknown	Unknown			0	83
American holly	Ilex opaca	NSL	Medium	0	0	0	Unknown	Unknown	Medium	Modeled	Unknown	Unknown			0	84
sweetgum	Liquidambar styraciflua	WDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	85
yellow-poplar	Liriodendron tulipifera	WDH	High	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	86
Osage-orange	Maclura pomifera	NDH	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	87
cucumbertree	Magnolia acuminata	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	88
bigleaf magnolia	Magnolia macrophylla	NSL	Low	0	0	0	Unknown	New Habitat	Medium	Absent	Unknown	New Habitat			0	89
mountain or Fraser magnolia	Magnolia fraseri	NSL	Low	0	0	0	Unknown	Unknown	NA	Absent	Unknown	Unknown			0	90
blackgum	Nyssa sylvatica	WDL	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	91
sycamore	Platanus occidentalis	NSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	92
scarlet oak	Quercus coccinea	WDL	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	93
shingle oak	Quercus imbricaria	NDH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	94

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laurel oak	Quercus laurifolia	NDH	Medium	0	0	0	Unknown	New Habitat	Medium	Absent	Unknown	New Habitat			0	95
blackjack oak	Quercus marilandica	NSL	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat			3	96
Shumard oak	Quercus shumardii	NSL	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat			3	97
post oak	Quercus stellata	WDH	High	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Migrate +	Migrate ++	3	98
bluejack oak	Quercus incana	NSL	Low	0	0	0	Unknown	New Habitat	Medium	Absent	Unknown	New Habitat			0	99
sassafras	Sassafras albidum	WSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	100
winged elm	Ulmus alata	WDL	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	101