

	sq. km	sq. mi	FIA Plots
Area of Region	13,217	5,103.1	261

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				
		Abundant	Common	High	Low	Scenario RCP45	Scenario RCP85	Scenario RCP45	Scenario RCP85	SHIFT RCP45	SHIFT RCP85			
Ash	3					Increase	19	23	Very Good	6	5	Likely	1	1
Hickory	5					No Change	13	9	Good	13	19	Infill	13	13
Maple	6	Abundant	3	High	23	Decrease	27	27	Fair	12	7	Migrate	4	11
Oak	7	Common	24	Medium	30	New	19	20	Poor	10	11			
Pine	7	Rare	37	Low	30	Unknown	10	9	Very Poor	17	14			
Other	36	Absent	24	FIA	5				FIA Only	2	2			
	64		88		88		88	88	Unknown	5	4			
										65	62			

Potential Changes in Climate Variables

Temperature (°F)

Scenario	2009	2039	2069	2099		
Annual	CCSM45	42.1	43.5	45.3	45.3	
Average	CCSM85	42.1	43.8	45.6	47.9	
	GFDL45	42.1	44.4	46.5	47.4	
	GFDL85	42.1	44.6	47.4	50.7	
	HAD45	42.1	44.3	46.7	47.9	
	HAD85	42.1	44.4	47.4	51.2	
Growing Season	CCSM45	54.0	55.4	56.8	57.0	
	CCSM85	54.0	55.5	57.3	60.0	
May—Sep	GFDL45	54.0	56.4	59.1	60.2	
	GFDL85	54.0	57.0	60.1	63.6	
	HAD45	54.0	56.3	58.2	59.9	
	HAD85	54.0	56.1	59.4	63.6	
Coldest Month	CCSM45	23.8	25.2	26.8	26.8	
	CCSM85	23.8	26.0	26.9	28.4	
Average	GFDL45	23.8	25.9	27.2	27.7	
	GFDL85	23.8	26.4	27.6	29.4	
	HAD45	23.8	25.1	27.4	27.5	
	HAD85	23.8	26.1	27.9	30.4	
Warmest Month	CCSM45	58.1	59.7	60.5	60.7	
	CCSM85	58.1	60.0	61.2	62.7	
Average	GFDL45	58.1	60.2	61.9	62.6	
	GFDL85	58.1	61.1	62.9	64.9	
	HAD45	58.1	60.7	61.8	63.1	
	HAD85	58.1	60.8	62.9	66.0	

Precipitation (in)

Scenario	2009	2039	2069	2099		
Annual	CCSM45	27.8	27.6	26.8	29.2	
Total	CCSM85	27.8	28.4	28.5	28.8	
	GFDL45	27.8	30.5	31.5	31.0	
	GFDL85	27.8	28.9	30.9	32.0	
	HAD45	27.8	28.7	29.7	29.3	
	HAD85	27.8	29.4	28.5	31.3	
Growing Season	CCSM45	13.0	12.8	12.0	13.2	
	CCSM85	13.0	12.8	12.7	11.9	
May—Sep	GFDL45	13.0	13.6	13.2	13.0	
	GFDL85	13.0	12.9	12.8	12.4	
	HAD45	13.0	13.1	12.2	12.7	
	HAD85	13.0	12.9	11.8	12.6	

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	63.2	1240.8	13.0	No change	Sm. dec.	High	Abundant	Very Good	Good			1	1
sugar maple	Acer saccharum	WDH	High	69.2	1198.1	12.8	No change	Sm. dec.	High	Abundant	Very Good	Good			1	2
white ash	Fraxinus americana	WDL	Medium	78.1	1132.4	11.9	Sm. dec.	Sm. dec.	Low	Abundant	Fair	Fair			0	3
black cherry	Prunus serotina	WDL	Medium	56.8	488.3	6.0	Sm. inc.	No change	Low	Common	Fair	Poor			1	4
eastern white pine	Pinus strobus	WDH	High	29.2	478.3	9.2	Sm. dec.	Sm. dec.	Low	Common	Poor	Poor			0	5
green ash	Fraxinus pennsylvanica	WSH	Low	33.2	429.5	14.7	No change	Sm. inc.	Medium	Common	Fair	Good			1	6
eastern hemlock	Tsuga canadensis	NSH	High	32.7	347.8	6.9	Sm. dec.	Lg. dec.	Low	Common	Poor	Very Poor			0	7
northern red oak	Quercus rubra	WDH	Medium	31	321.7	7.3	Sm. inc.	Sm. inc.	High	Common	Very Good	Very Good			1	8
quaking aspen	Populus tremuloides	WDH	High	30.5	310.4	7.3	Sm. dec.	Lg. dec.	Medium	Common	Poor	Poor			0	9
American beech	Fagus grandifolia	WDH	High	45.3	267.6	4.0	No change	No change	Medium	Common	Fair	Fair			1	10
silver maple	Acer saccharinum	NSH	Low	17.6	229.7	16.9	No change	No change	High	Common	Good	Good			1	11
American basswood	Tilia americana	WSL	Medium	39.4	216.6	5.0	No change	No change	Medium	Common	Fair	Fair			1	12
American elm	Ulmus americana	WDH	Medium	42.5	211.8	5.3	Sm. inc.	Lg. inc.	Medium	Common	Good	Very Good			1	13
yellow birch	Betula alleghaniensis	NDL	High	22.6	182.5	4.7	Lg. dec.	Lg. dec.	Medium	Common	Poor	Poor			0	14
bitternut hickory	Carya cordiformis	WSL	Low	31.1	171.5	6.5	Sm. dec.	No change	High	Common	Fair	Good			1	15
Norway spruce	Picea abies	NSH	FIA	12.5	124.3	8.8	Unknown	Unknown	NA	Common	NNIS	NNIS			0	16
eastern hophornbeam; ironw	Ostrya virginiana	WSL	Low	33.9	113.0	3.1	No change	No change	High	Common	Good	Good			1	17
black walnut	Juglans nigra	WDH	Low	22.3	110.2	6.5	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good			1	18
shagbark hickory	Carya ovata	WSL	Medium	34	110.1	4.3	Sm. inc.	Sm. inc.	Medium	Common	Good	Good			1	19
boxelder	Acer negundo	WSH	Low	12.1	95.6	9.1	Sm. inc.	Sm. inc.	High	Common	Very Good	Very Good			1	20
black willow	Salix nigra	NSH	Low	11.3	92.9	13.3	Lg. dec.	Sm. dec.	Low	Common	Very Poor	Poor			0	21
black locust	Robinia pseudoacacia	NSH	Low	9	80.7	8.3	No change	Sm. inc.	Medium	Common	Fair	Good			1	22
red pine	Pinus resinosa	NSH	Medium	6.2	74.7	4.0	Sm. dec.	Sm. dec.	Low	Common	Poor	Poor	Infill +	Infill +	2	23
pignut hickory	Carya glabra	WDL	Medium	15.9	66.2	5.6	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good	Infill ++	Infill ++	1	24
black oak	Quercus velutina	WDH	High	5.1	65.5	7.2	Sm. inc.	Sm. inc.	Medium	Common	Good	Good	Infill ++	Infill ++	2	25
Scots pine	Pinus sylvestris	NSH	FIA	4.4	60.7	7.4	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	26
balsam fir	Abies balsamea	NDH	High	2.3	57.9	9.8	Lg. dec.	Lg. dec.	Low	Rare	Very Poor	Very Poor			2	27
bigtooth aspen	Populus grandidentata	NSL	Medium	9.5	57.0	5.0	No change	Sm. dec.	Medium	Common	Fair	Poor	Infill +	Infill +	1	28
northern white-cedar	Thuja occidentalis	WSH	High	3.4	56.5	6.4	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	29
white spruce	Picea glauca	NSL	Medium	8.4	50.6	8.0	Lg. dec.	Lg. dec.	Medium	Common	Poor	Poor	Infill +		0	30
eastern cottonwood	Populus deltoides	NSH	Low	7.9	43.2	8.1	No change	Sm. inc.	Medium	Rare	Poor	Fair			1	31
American hornbeam; musclev	Carpinus caroliniana	WSL	Low	27.1	41.7	1.5	Sm. dec.	No change	Medium	Rare	Very Poor	Poor			1	32
white oak	Quercus alba	WDH	Medium	9.9	41.0	1.9	Lg. inc.	Lg. inc.	High	Rare	Good	Good	Infill ++	Infill ++	2	33
red spruce	Picea rubens	NDH	High	6.5	31.3	2.0	Sm. dec.	Sm. dec.	Low	Rare	Very Poor	Very Poor			2	34
serviceberry	Amelanchier spp.	NSL	Low	12.9	25.4	1.3	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	35
sweet birch	Betula lenta	NDH	High	6.5	24.2	1.3	No change	No change	Low	Rare	Very Poor	Very Poor			2	36
butternut	Juglans cinerea	NSLX	FIA	4.3	23.6	5.1	Unknown	Unknown	Low	Rare	FIA Only	FIA Only			0	37
blackgum	Nyssa sylvatica	WDL	Medium	3.1	22.9	5.8	No change	Sm. inc.	High	Rare	Fair	Good	Infill +	Infill ++	2	38
black ash	Fraxinus nigra	WSH	Medium	7.4	21.6	1.9	Sm. dec.	Sm. dec.	Low	Rare	Very Poor	Very Poor			0	39
striped maple	Acer pensylvanicum	NSL	Medium	8.9	21.5	1.2	Sm. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	40
swamp white oak	Quercus bicolor	NSL	Low	10.2	18.4	4.1	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good	Infill ++	Infill ++	2	41
sycamore	Platanus occidentalis	NSL	Low	0.8	18.2	7.2	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			2	42
chestnut oak	Quercus prinus	NDH	High	1.9	14.8	1.6	Lg. inc.	Lg. inc.	High	Rare	Good	Good			2	43
tamarack (native)	Larix laricina	NSH	High	1.8	14.6	5.5	Sm. dec.	Sm. dec.	Low	Rare	Very Poor	Very Poor			2	44
gray birch	Betula populifolia	NSL	Low	3	14.0	4.6	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	45
chokecherry	Prunus virginiana	NSLX	FIA	11	13.6	1.7	Unknown	Unknown	Medium	Rare	FIA Only	FIA Only			0	46
bur oak	Quercus macrocarpa	NDH	Medium	8	13.3	2.9	Lg. dec.	Lg. dec.	High	Rare	Poor	Poor			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
slippery elm	Ulmus rubra	WSL	Low	3.4	12.1	2.4	Sm. inc.	Sm. inc.	Medium	Rare	Fair	Fair	Infill +	Infill +	2	48
pitch pine	Pinus rigida	NSH	High	4.5	12.1	5.9	Sm. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	49
black spruce	Picea mariana	NSH	High	0.8	11.6	15.3	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	50
eastern redcedar	Juniperus virginiana	WDH	Medium	4.5	9.4	4.5	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good	Infill ++	Infill ++	2	51
pin cherry	Prunus pensylvanica	NSL	Low	2.6	8.1	1.7	Lg. dec.	Very Lg. dec.	Medium	Rare	Very Poor	Lost			0	52
jack pine	Pinus banksiana	NSH	Medium	0.7	6.7	8.2	Very Lg. dec.	Very Lg. dec.	High	Rare	Lost	Lost			0	53
yellow-poplar	Liriodendron tulipifera	WDH	High	11.2	5.8	1.3	Lg. inc.	Lg. inc.	High	Rare	Good	Good	Infill ++	Infill ++	1	54
cucumbertree	Magnolia acuminata	NSL	Low	4.4	5.5	1.2	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	55
paper birch	Betula papyrifera	WDH	High	1.7	4.6	1.2	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	2	56
shellbark hickory	Carya laciniata	NSL	Low	0.4	2.6	2.0	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	57
pin oak	Quercus palustris	NSH	Low	0.8	2.6	3.4	Lg. inc.	Lg. inc.	Low	Rare	Fair	Fair	Infill +	Infill +	2	58
Norway maple	Acer platanoides	NSL	FIA	3.8	2.1	2.8	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	59
mockernut hickory	Carya alba	WDL	Medium	1.1	1.9	1.1	Lg. inc.	Lg. inc.	High	Rare	Good	Good			2	60
sassafras	Sassafras albidum	WSL	Low	0.9	1.1	0.4	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			2	61
flowering dogwood	Cornus florida	WDL	Medium	0.4	1.0	0.7	Sm. inc.	Sm. inc.	Medium	Rare	Fair	Fair		Infill +	2	62
Table Mountain pine	Pinus pungens	NSL	Low	0.7	0.8	1.0	Lg. dec.	Very Lg. dec.	High	Rare	Poor	Lost			0	63
Virginia pine	Pinus virginiana	NDH	High	0.7	0.3	0.4	Lg. dec.	Lg. inc.	Medium	Rare	Very Poor	Good			2	64
shortleaf pine	Pinus echinata	WDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate +	3	65
Ohio buckeye	Aesculus glabra	NSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	66
black hickory	Carya texana	NDL	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			0	67
sugarberry	Celtis laevigata	NDH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			0	68
hackberry	Celtis occidentalis	WDH	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Likely +	Likely +	3	69
eastern redbud	Cercis canadensis	NSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	70
common persimmon	Diospyros virginiana	NSL	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat		Migrate +	3	71
honeylocust	Gleditsia triacanthos	NSH	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat		Migrate +	3	72
American holly	Ilex opaca	NSL	Medium	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	73
sweetgum	Liquidambar styraciflua	WDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate ++	3	74
bigleaf magnolia	Magnolia macrophylla	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	75
mountain or Fraser magnolia	Magnolia fraseri	NSL	Low	0	0	0	Unknown	Unknown	Low	Absent	Unknown	Unknown			0	76
red mulberry	Morus rubra	NSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate +	3	77
scarlet oak	Quercus coccinea	WDL	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	78
northern pin oak	Quercus ellipsoidalis	NSH	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat			3	79
southern red oak	Quercus falcata	WDL	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat		Migrate +	3	80
shingle oak	Quercus imbricaria	NDH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate +	3	81
overcup oak	Quercus lyrata	NSL	Medium	0	0	0	Unknown	New Habitat	Low	Absent	Unknown	New Habitat			3	82
blackjack oak	Quercus marilandica	NSL	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat			3	83
chinkapin oak	Quercus muehlenbergii	NSL	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	84
Shumard oak	Quercus shumardii	NSL	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat			0	85
post oak	Quercus stellata	WDH	High	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Migrate +	Migrate ++	3	86
American mountain-ash	Sorbus americana	NSL	Low	0	0	0	Unknown	Unknown	Low	Absent	Unknown	Unknown			0	87
winged elm	Ulmus alata	WDL	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			0	88