

	sq. km	sq. mi	FIA Plots
Area of Region	122,211	47,186	4,328

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	27	29	Increase	28	29	Very Good	6	6	Likely	1	1
Hickory	5			Medium	34	56	No Change	18	17	Good	20	20	Infill	16	16
Maple	7	Abundant	8	Low	40	21	Decrease	14	14	Fair	13	16	Migrate	1	9
Oak	8	Common	15	FIA	9		New	34	36	Poor	13	10		18	26
Pine	5	Rare	46				Unknown	16	14	Very Poor	8	8			
Other	41	Absent	41					110	110	FIA Only	5	5			
	69		110							Unknown	7	5			
											72	70			

Potential Changes in Climate Variables

Temperature (°F)

	Scenario	2009	2039	2069	2099	
Annual Average	CCSM45	41.9	43.8	46.3	46.3	
	CCSM85	41.9	44.4	47.1	50.4	
	GFDL45	41.9	45.0	48.5	50.0	
	GFDL85	41.9	45.5	50.0	55.1	
	HAD45	41.9	45.1	48.2	50.0	
HAD85	41.9	45.2	49.4	55.1		
Growing Season (May—Sep)	CCSM45	60.1	62.2	64.1	64.5	
	CCSM85	60.1	62.5	65.0	68.9	
	GFDL45	60.1	63.5	67.4	69.1	
	GFDL85	60.1	64.2	68.9	74.3	
	HAD45	60.1	63.2	65.9	68.2	
HAD85	60.1	62.9	67.4	73.6		
Coldest Month Average	CCSM45	13.1	14.8	17.1	17.3	
	CCSM85	13.1	16.1	17.4	20.0	
	GFDL45	13.1	16.2	18.8	20.0	
	GFDL85	13.1	17.2	19.7	22.7	
	HAD45	13.1	15.8	18.9	19.3	
HAD85	13.1	17.3	19.9	23.7		
Warmest Month Average	CCSM45	66.3	68.6	69.8	69.9	
	CCSM85	66.3	69.1	70.8	72.8	
	GFDL45	66.3	69.4	71.5	72.8	
	GFDL85	66.3	70.2	73.1	75.9	
	HAD45	66.3	69.5	70.9	72.5	
HAD85	66.3	69.3	72.0	76.4		

Precipitation (in)

	Scenario	2009	2039	2069	2099	
Annual Total	CCSM45	46.0	45.0	44.2	48.5	
	CCSM85	46.0	46.6	47.0	48.7	
	GFDL45	46.0	50.4	52.5	51.3	
	GFDL85	46.0	48.6	51.3	53.0	
	HAD45	46.0	49.0	51.1	50.7	
HAD85	46.0	50.2	49.8	53.6		
Growing Season (May—Sep)	CCSM45	21.2	21.1	19.7	21.5	
	CCSM85	21.2	21.2	21.3	20.2	
	GFDL45	21.2	21.6	20.8	20.8	
	GFDL85	21.2	21.4	20.9	19.7	
	HAD45	21.2	22.5	21.8	22.9	
HAD85	21.2	21.9	21.3	23.0		

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.

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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	90.9	1309.1	12.5	Sm. inc.	No change	High	Abundant	Very Good	Very Good			1	1
sugar maple	Acer saccharum	WDH	High	81.9	1280.9	13.9	No change	No change	High	Abundant	Very Good	Very Good			1	2
balsam fir	Abies balsamea	NDH	High	64.2	1071.9	15.3	Lg. dec.	Lg. dec.	Low	Abundant	Poor	Poor			0	3
American beech	Fagus grandifolia	WDH	High	74.6	812.6	9.9	No change	Sm. dec.	Medium	Abundant	Good	Fair			1	4
red spruce	Picea rubens	NDH	High	69	733.4	9.9	Sm. dec.	Sm. dec.	Low	Abundant	Fair	Fair			0	5
yellow birch	Betula alleghaniensis	NDL	High	79.9	729.9	8.4	Sm. dec.	Sm. dec.	Medium	Abundant	Fair	Fair			0	6
eastern hemlock	Tsuga canadensis	NSH	High	50	626.8	10.6	Sm. inc.	No change	Low	Abundant	Good	Fair			1	7
eastern white pine	Pinus strobus	WDH	High	49.7	600.6	10.0	Sm. inc.	Sm. inc.	Low	Abundant	Good	Good			1	8
paper birch	Betula papyrifera	WDH	High	66	443.7	6.0	No change	Sm. dec.	Medium	Common	Fair	Poor			1	9
white ash	Fraxinus americana	WDL	Medium	54.8	346.4	5.2	Sm. inc.	Sm. inc.	Low	Common	Fair	Fair			1	10
northern white-cedar	Thuja occidentalis	WSH	High	29.7	288.0	8.8	Sm. dec.	No change	Medium	Common	Poor	Fair			1	11
northern red oak	Quercus rubra	WDH	Medium	27.1	244.9	6.4	Lg. inc.	Lg. inc.	High	Common	Very Good	Very Good			1	12
black cherry	Prunus serotina	WDL	Medium	45.8	232.7	4.5	Lg. inc.	Lg. inc.	Low	Common	Good	Good			1	13
quaking aspen	Populus tremuloides	WDH	High	40.3	221.2	4.8	Sm. inc.	Sm. inc.	Medium	Common	Good	Good			1	14
American elm	Ulmus americana	WDH	Medium	22.9	161.7	6.2	No change	No change	Medium	Common	Fair	Fair			1	15
striped maple	Acer pensylvanicum	NSL	Medium	53.6	113.5	1.9	Sm. dec.	Sm. dec.	Medium	Common	Poor	Poor			0	16
black spruce	Picea mariana	NSH	High	10.1	101.8	8.9	No change	No change	Medium	Common	Fair	Fair	Infill +	Infill +	1	17
white spruce	Picea glauca	NSL	Medium	20.9	85.0	3.5	No change	No change	Medium	Common	Fair	Fair			1	18
eastern hophornbeam; ironw	Ostrya virginiana	WSL	Low	31.1	83.8	2.4	Sm. inc.	Sm. inc.	High	Common	Very Good	Very Good			1	19
sweet birch	Betula lenta	NDH	High	11.7	77.8	4.7	Lg. inc.	Lg. inc.	Low	Common	Good	Good	Infill ++	Infill ++	2	20
bigtooth aspen	Populus grandidentata	NSL	Medium	18.3	67.2	2.9	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good			1	21
American basswood	Tilia americana	WSL	Medium	16.2	59.6	3.2	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good			1	22
red pine	Pinus resinosa	NSH	Medium	5.7	54.1	8.0	No change	No change	Low	Common	Poor	Poor	Infill +	Infill +	2	23
gray birch	Betula populifolia	NSL	Low	14.5	44.9	2.7	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	24
black ash	Fraxinus nigra	WSH	Medium	14.1	44.4	2.8	Sm. inc.	Sm. inc.	Low	Rare	Poor	Poor			1	25
pin cherry	Prunus pensylvanica	NSL	Low	22.1	40.1	1.7	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	26
tamarack (native)	Larix laricina	NSH	High	8.8	37.2	3.9	No change	No change	Low	Rare	Very Poor	Very Poor			0	27
bitternut hickory	Carya cordiformis	WSL	Low	7.2	36.8	4.5	No change	No change	High	Rare	Fair	Fair	Infill +	Infill +	1	28
green ash	Fraxinus pennsylvanica	WSH	Low	4.8	32.5	5.6	No change	Sm. inc.	Medium	Rare	Poor	Fair	Infill +	Infill +	2	29
boxelder	Acer negundo	WSH	Low	1.2	30.3	18.5	No change	No change	High	Rare	Fair	Fair	Infill +	Infill +	2	30
Norway spruce	Picea abies	NSH	FIA	2.3	23.0	8.4	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	31
silver maple	Acer saccharinum	NSH	Low	1.2	19.1	14.5	No change	No change	High	Rare	Fair	Fair	Infill +	Infill +	2	32
balsam poplar	Populus balsamifera	NSH	Medium	5.1	18.5	3.4	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	33
serviceberry	Amelanchier spp.	NSL	Low	11.9	17.1	1.3	No change	Sm. inc.	Medium	Rare	Poor	Fair			1	34
Scots pine	Pinus sylvestris	NSH	FIA	2.2	16.6	7.0	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	35
shagbark hickory	Carya ovata	WSL	Medium	2.7	16.5	4.1	Sm. inc.	Lg. inc.	Medium	Rare	Fair	Good	Infill +	Infill ++	2	36
eastern cottonwood	Populus deltoides	NSH	Low	1	13.9	11.4	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	2	37
black locust	Robinia pseudoacacia	NDH	Low	1.4	13.8	7.3	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good	Infill ++	Infill ++	2	38
white oak	Quercus alba	WDH	Medium	3.6	13.6	2.0	Lg. inc.	Lg. inc.	High	Rare	Good	Good	Infill ++	Infill ++	2	39
mountain maple	Acer spicatum	NSL	Low	12.1	12.2	1.0	Lg. dec.	Lg. dec.	High	Rare	Poor	Poor			1	40
bur oak	Quercus macrocarpa	NDH	Medium	1.4	11.4	8.0	Sm. dec.	Sm. dec.	High	Rare	Very Poor	Poor	Infill +	Infill +	2	41
black willow	Salix nigra	NSH	Low	0.7	10.9	10.1	Sm. dec.	No change	Low	Rare	Very Poor	Very Poor			2	42
slippery elm	Ulmus rubra	WSL	Low	1.4	9.8	4.3	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	2	43
eastern redcedar	Juniperus virginiana	WDH	Medium	1	9.4	6.0	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			2	44
American hornbeam; musclev	Carpinus caroliniana	WSL	Low	5	8.6	1.4	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	1	45
butternut	Juglans cinerea	NSLX	FIA	2.3	7.4	2.5	Unknown	Unknown	Low	Rare	FIA Only	FIA Only			0	46
American mountain-ash	Sorbus americana	NSL	Low	9.2	7.4	0.8	Lg. dec.	Lg. dec.	Low	Rare	Very Poor	Very Poor			0	47

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Common Name	Scientific Name	Range	MR	%Cell	FIAsum	FIAiv	ChngCl45	ChngCl85	Adap	Abund	Capabil45	Capabil85	SHIFT45	SHIFT85	SSO	N
black oak	Quercus velutina	WDH	High	1	7.4	1.9	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			2	48
chestnut oak	Quercus prinus	NDH	High	1	6.3	1.9	Lg. inc.	Lg. inc.	High	Rare	Good	Good			2	49
pignut hickory	Carya glabra	WDL	Medium	1.1	5.2	1.5	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			2	50
swamp white oak	Quercus bicolor	NSL	Low	0.9	4.9	6.2	No change	Sm. inc.	Medium	Rare	Poor	Fair	Infill +	Infill +	2	51
scarlet oak	Quercus coccinea	WDL	Medium	0.4	3.9	2.6	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			2	52
Siberian elm	Ulmus pumila	NDH	FIA	0	2.7	8.2	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	53
pitch pine	Pinus rigida	NSH	High	0.4	2.2	2.3	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			2	54
black walnut	Juglans nigra	WDH	Low	0.2	1.6	5.3	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			2	55
jack pine	Pinus banksiana	NSH	Medium	0.1	1.3	6.6	No change	No change	High	Rare	Fair	Fair	Infill +	Infill +	2	56
chokecherry	Prunus virginiana	NSLX	FIA	1.7	1.2	0.6	Unknown	Unknown	Medium	Rare	FIA Only	FIA Only			0	57
hackberry	Celtis occidentalis	WDH	Medium	0.2	0.8	4.9	Lg. inc.	Lg. inc.	High	Rare	Good	Good			2	58
sassafras	Sassafras albidum	WSL	Low	0.1	0.5	0.8	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			2	59
sycamore	Platanus occidentalis	NSL	Low	0.1	0.5	2.1	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			2	60
blackgum	Nyssa sylvatica	WDL	Medium	0.2	0.4	1.0	Lg. inc.	Lg. inc.	High	Rare	Good	Good			2	61
mockernut hickory	Carya alba	WDL	Medium	0.3	0.4	1.0	Lg. inc.	Lg. inc.	High	Rare	Good	Good			2	62
American chestnut	Castanea dentata	NSLX	FIA	0.2	0.2	0.3	Unknown	Unknown	Medium	Rare	FIA Only	FIA Only			0	63
flowering dogwood	Cornus florida	WDL	Medium	0.1	0.2	0.2	Sm. inc.	Lg. inc.	Medium	Rare	Fair	Good			2	64
bear oak; scrub oak	Quercus ilicifolia	NSLX	FIA	0	0.2	1.1	Unknown	Unknown	Medium	Rare	FIA Only	FIA Only			0	65
Norway maple	Acer platanoides	NSL	FIA	0.2	0.2	0.7	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	66
rock elm	Ulmus thomasii	NSLX	FIA	0.1	0.1	0.6	Unknown	Unknown	Low	Rare	FIA Only	FIA Only			0	67
Atlantic white-cedar	Chamaecyparis thyoides	NSH	Low	0.1	0.1	0.7	Sm. dec.	Lg. dec.	Low	Rare	Very Poor	Very Poor			0	68
shellbark hickory	Carya laciniosa	NSL	Low	0	0.1	0.2	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	69
sand pine	Pinus clausa	NDH	High	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat			0	70
shortleaf pine	Pinus echinata	WDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	71
Table Mountain pine	Pinus pungens	NSL	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat			3	72
loblolly pine	Pinus taeda	WDH	High	0	0	0	Unknown	New Habitat	Medium	Absent	Unknown	New Habitat			3	73
Virginia pine	Pinus virginiana	NDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate +	3	74
bald cypress	Taxodium distichum	NSH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			0	75
black maple	Acer nigrum	NSH	Low	0	0	0	Unknown	Unknown	High	Absent	Unknown	Unknown			0	76
Ohio buckeye	Aesculus glabra	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	77
yellow buckeye	Aesculus flava	NSL	Low	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat			3	78
pawpaw	Asimina triloba	NSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	79
cittamwood/gum bumelia	Sideroxylon lanuginosum ssp.	NSL	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat			0	80
water hickory	Carya aquatica	NSL	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			0	81
pecan	Carya illinoensis	NSH	Low	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat			0	82
black hickory	Carya texana	NDL	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			0	83
sugarberry	Celtis laevigata	NDH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			0	84
eastern redbud	Cercis canadensis	NSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate +	3	85
common persimmon	Diospyros virginiana	NSL	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat		Migrate +	3	86
honeylocust	Gleditsia triacanthos	NSH	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat			3	87
silverbell	Halesia spp.	NSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			0	88
American holly	Ilex opaca	NSL	Medium	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	89
sweetgum	Liquidambar styraciflua	WDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate ++	3	90
yellow-poplar	Liriodendron tulipifera	WDH	High	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Likely +	Likely +	3	91
Osage-orange	Maclura pomifera	NDH	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat		Migrate +	3	92
cucumbertree	Magnolia acuminata	NSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate +	3	93
southern magnolia	Magnolia grandiflora	NSL	Low	0	0	0	Unknown	Unknown	Medium	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
bigleaf magnolia	Magnolia macrophylla	NSL	Low	0	0	0	New Habitat	Unknown	Medium	Absent	New Habitat	Unknown			0	95
mountain or Fraser magnolia	Magnolia fraseri	NSL	Low	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat			0	96
sourwood	Oxydendrum arboreum	NDL	High	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat			3	97
redbay	Persea borbonia	NSL	Low	0	0	0	Unknown	New Habitat	High	Absent	Unknown	New Habitat			0	98
northern pin oak	Quercus ellipsoidalis	NSH	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat			3	99
southern red oak	Quercus falcata	WDL	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Migrate +		3	100
shingle oak	Quercus imbricaria	NDH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	101
overcup oak	Quercus lyrata	NSL	Medium	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat			0	102
blackjack oak	Quercus marilandica	NSL	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat			3	103
chinkapin oak	Quercus muehlenbergii	NSL	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +		3	104
water oak	Quercus nigra	WDH	High	0	0	0	Unknown	New Habitat	Medium	Absent	Unknown	New Habitat			3	105
pin oak	Quercus palustris	NSH	Low	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	106
willow oak	Quercus phellos	NSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	107
Shumard oak	Quercus shumardii	NSL	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat			0	108
post oak	Quercus stellata	WDH	High	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat			3	109
winged elm	Ulmus alata	WDL	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			0	110