

sq. km sq. mi FIA Plots
Area of Region 62,741 24,224 2,008

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	26	28	Increase	32	36	Very Good	10	10	Likely	0	0
Hickory	5			Medium	33	59	No Change	19	17	Good	23	26	Infill	8	11
Maple	7	Abundant	6	Low	45	21	Decrease	27	25	Fair	12	15	Migrate	3	10
Oak	13	Common	29	FIA	12		New	19	20	Poor	13	10			
Pine	8	Rare	55				Unknown	19	18	Very Poor	17	15			
Other	54	Absent	26							FIA Only	6	6			
	90		116		116	108		116	116	Unknown	8	7			
											89	89			

Potential Changes in Climate Variables

Temperature (°F)

	Scenario	2009	2039	2069	2099	
Annual Average	CCSM45	51.8	53.7	56.0	56.2	
	CCSM85	51.8	54.1	56.6	59.7	
	GFDL45	51.8	54.5	57.5	58.4	
	GFDL85	51.8	55.1	58.6	62.6	
	HAD45	51.8	54.4	57.8	59.1	
	HAD85	51.8	54.7	59.0	63.5	
Growing Season (May—Sep)	CCSM45	66.9	68.9	71.0	71.6	
	CCSM85	66.9	69.3	71.9	75.9	
	GFDL45	66.9	70.1	73.8	75.2	
	GFDL85	66.9	71.1	75.3	79.8	
	HAD45	66.9	70.1	73.4	75.2	
	HAD85	66.9	70.3	75.9	80.7	
Coldest Month (Average)	CCSM45	28.5	30.4	31.9	32.3	
	CCSM85	28.5	31.3	32.4	33.8	
	GFDL45	28.5	32.0	32.6	33.3	
	GFDL85	28.5	31.3	32.2	33.4	
	HAD45	28.5	29.4	31.6	31.8	
	HAD85	28.5	30.1	31.8	33.6	
Warmest Month (Average)	CCSM45	72.2	74.3	75.6	75.9	
	CCSM85	72.2	74.6	76.3	78.3	
	GFDL45	72.2	75.7	77.8	79.0	
	GFDL85	72.2	77.1	79.7	82.3	
	HAD45	72.2	75.9	78.4	79.6	
	HAD85	72.2	77.0	80.8	83.9	

Precipitation (in)

	Scenario	2009	2039	2069	2099	
Annual Total	CCSM45	45.5	48.8	49.9	50.8	
	CCSM85	45.5	49.5	50.9	55.4	
	GFDL45	45.5	49.8	51.0	53.3	
	GFDL85	45.5	47.1	52.3	53.7	
	HAD45	45.5	47.2	47.6	47.0	
	HAD85	45.5	48.0	45.3	47.6	
Growing Season (May—Sep)	CCSM45	21.3	23.3	23.7	23.8	
	CCSM85	21.3	23.1	22.8	24.6	
	GFDL45	21.3	23.1	22.5	23.5	
	GFDL85	21.3	21.1	22.4	22.8	
	HAD45	21.3	22.7	20.5	21.0	
	HAD85	21.3	22.1	19.6	20.5	

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	86.3	1135.5	10.9	Sm. dec.	Sm. dec.	High	Abundant	Good	Good			1	1
yellow-poplar	Liriodendron tulipifera	WDH	High	69.9	913.0	11.1	No change	Sm. dec.	High	Abundant	Very Good	Good			1	2
sugar maple	Acer saccharum	WDH	High	79.1	893.6	9.5	No change	Sm. dec.	High	Abundant	Very Good	Good			1	3
chestnut oak	Quercus prinus	NDH	High	63.5	814.5	10.0	No change	No change	High	Abundant	Very Good	Very Good			1	4
white oak	Quercus alba	WDH	Medium	66.2	769.0	9.4	Sm. inc.	Sm. inc.	High	Abundant	Very Good	Very Good			1	5
northern red oak	Quercus rubra	WDH	Medium	69.3	513.3	6.0	Sm. inc.	Sm. inc.	High	Abundant	Very Good	Very Good			1	6
black cherry	Prunus serotina	WDL	Medium	52.2	405.6	6.1	No change	No change	Low	Common	Poor	Poor			0	7
American beech	Fagus grandifolia	WDH	High	56.5	402.2	6.4	No change	No change	Medium	Common	Fair	Fair			1	8
black locust	Robinia pseudoacacia	NDH	Low	57.5	393.7	5.5	No change	No change	Medium	Common	Fair	Fair			1	9
black oak	Quercus velutina	WDH	High	58.6	351.5	4.9	Sm. inc.	Lg. inc.	Medium	Common	Good	Very Good			1	10
white ash	Fraxinus americana	WDL	Medium	59.3	304.3	4.3	No change	Sm. inc.	Low	Common	Poor	Fair			1	11
pignut hickory	Carya glabra	WDL	Medium	61.6	291.9	4.0	Sm. inc.	No change	Medium	Common	Good	Fair			1	12
scarlet oak	Quercus coccinea	WDL	Medium	40.2	262.7	5.0	Sm. inc.	No change	Medium	Common	Good	Fair			1	13
Virginia pine	Pinus virginiana	NDH	High	23	210.6	7.1	Sm. inc.	Sm. inc.	Medium	Common	Good	Good			1	14
sweet birch	Betula lenta	NDH	High	41.7	209.5	4.3	Sm. dec.	Sm. dec.	Low	Common	Poor	Poor			0	15
moccasin hickory	Carya alba	WDL	Medium	48.2	204.6	3.4	Sm. inc.	Lg. inc.	High	Common	Very Good	Very Good			1	16
blackgum	Nyssa sylvatica	WDL	Medium	55.2	187.4	2.7	Sm. inc.	Sm. inc.	High	Common	Very Good	Very Good			1	17
eastern white pine	Pinus strobus	WDH	High	14.6	173.5	7.7	Sm. inc.	Sm. inc.	Low	Common	Fair	Fair			1	18
American basswood	Tilia americana	WSL	Medium	34.5	169.8	4.2	No change	Sm. dec.	Medium	Common	Fair	Poor			1	19
eastern hemlock	Tsuga canadensis	NSH	High	25.5	152.8	5.2	No change	No change	Low	Common	Poor	Poor			0	20
sassafras	Sassafras albidum	WSL	Low	41.4	148.4	2.8	Sm. inc.	Sm. inc.	Medium	Common	Good	Good			1	21
shagbark hickory	Carya ovata	WSL	Medium	41.2	139.5	2.7	No change	No change	Medium	Common	Fair	Fair			1	22
sycamore	Platanus occidentalis	NSL	Low	21.3	133.7	5.3	Sm. inc.	Lg. inc.	Medium	Common	Good	Very Good			1	23
sourwood	Oxydendrum arboreum	NDL	High	34.7	132.9	3.4	Sm. inc.	No change	High	Common	Very Good	Good			1	24
American elm	Ulmus americana	WDH	Medium	20.3	121.5	4.2	No change	Sm. inc.	Medium	Common	Fair	Good			1	25
yellow birch	Betula alleghaniensis	NDL	High	14.6	110.3	7.1	Lg. dec.	Lg. dec.	Medium	Common	Poor	Poor			0	26
slippery elm	Ulmus rubra	WSL	Low	29.6	102.6	2.9	No change	Sm. inc.	Medium	Common	Fair	Good			1	27
black walnut	Juglans nigra	WDH	Low	23.6	100.9	3.3	Sm. inc.	Lg. inc.	Medium	Common	Good	Very Good			1	28
cucumber tree	Magnolia acuminata	NSL	Low	33.7	84.4	2.2	No change	No change	Medium	Common	Fair	Fair			1	29
yellow buckeye	Aesculus flava	NSL	Low	16.7	78.1	4.2	Sm. dec.	Sm. dec.	Low	Common	Poor	Poor			0	30
boxelder	Acer negundo	WSH	Low	9.2	72.0	5.7	No change	No change	High	Common	Good	Good	Infill ++	Infill ++	1	31
red spruce	Picea rubens	NDH	High	6.6	60.5	9.0	Sm. dec.	Sm. dec.	Low	Common	Poor	Poor	Infill +	Infill +	2	32
pitch pine	Pinus rigida	NSH	High	13.2	58.8	3.7	No change	No change	Medium	Common	Fair	Fair			1	33
eastern redcedar	Juniperus virginiana	WDH	Medium	5.6	57.1	7.0	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good	Infill ++	Infill ++	1	34
bitternut hickory	Carya cordiformis	WSL	Low	23	54.9	2.0	Lg. inc.	Lg. inc.	High	Common	Very Good	Very Good			1	35
ailanthus	Ailanthus altissima	NSL	FIA	12.6	41.1	2.6	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	36
serviceberry	Amelanchier spp.	NSL	Low	21.8	35.7	1.2	Sm. dec.	No change	Medium	Rare	Very Poor	Poor			1	37
eastern redbud	Cercis canadensis	NSL	Low	16.2	34.2	1.5	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			0	38
flowering dogwood	Cornus florida	WDL	Medium	25.4	33.8	1.0	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			1	39
American hornbeam; musclev	Carpinus caroliniana	WSL	Low	17.1	32.8	1.7	No change	Sm. inc.	Medium	Rare	Poor	Fair			1	40
eastern hophornbeam; ironw	Ostrya virginiana	WSL	Low	23.7	31.4	1.1	Sm. inc.	Lg. inc.	High	Rare	Good	Good			1	41
bigtooth aspen	Populus grandidentata	NSL	Medium	7.9	30.2	3.4	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	42
loblolly pine	Pinus taeda	WDH	High	1.7	28.0	9.0	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			2	43
pin cherry	Prunus pensylvanica	NSL	Low	7.3	23.3	2.9	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	44
Table Mountain pine	Pinus pungens	NSL	Low	3.7	22.3	3.5	No change	No change	High	Rare	Fair	Fair	Infill +	Infill +	2	45
mountain or Fraser magnolia	Magnolia fraseri	NSL	Low	10.2	21.9	2.1	Sm. inc.	Sm. inc.	NA	Rare	Unknown	Unknown			0	46
silver maple	Acer saccharinum	NSH	Low	1.3	21.4	7.6	Sm. dec.	No change	High	Rare	Poor	Fair		Infill +	2	47

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hackberry	Celtis occidentalis	WDH	Medium	5.6	17.8	2.3	No change	Sm. inc.	High	Rare	Fair	Good	Infill +	Infill ++	2	48
post oak	Quercus stellata	WDH	High	2.9	17.1	5.1	Lg. inc.	Lg. inc.	High	Rare	Good	Good			2	49
pawpaw	Asimina triloba	NSL	Low	7.9	16.7	1.5	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	50
paulownia	Paulownia tomentosa	NSL	FIA	4.4	14.2	2.9	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	51
common persimmon	Diospyros virginiana	NSL	Low	3.8	9.1	1.6	Sm. inc.	Lg. inc.	High	Rare	Good	Good	Infill ++	Infill ++	1	52
river birch	Betula nigra	NSL	Low	0.9	8.3	8.7	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			2	53
butternut	Juglans cinerea	NSLX	FIA	3.1	7.0	2.0	Unknown	Unknown	Low	Rare	FIA Only	FIA Only			0	54
chinkapin oak	Quercus muehlenbergii	NSL	Medium	1.9	6.8	3.0	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			2	55
green ash	Fraxinus pennsylvanica	WSH	Low	3.4	6.3	1.0	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good	Infill ++	Infill ++	2	56
Osage-orange	Maclura pomifera	NDH	Medium	0.4	6.2	2.5	Sm. dec.	Sm. inc.	High	Rare	Poor	Good			2	57
black maple	Acer nigrum	NSH	Low	2.4	5.6	1.8	Lg. dec.	Lg. dec.	High	Rare	Poor	Poor			0	58
Norway spruce	Picea abies	NSH	FIA	0.8	5.2	3.5	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	59
quaking aspen	Populus tremuloides	WDH	High	0.2	4.3	27.2	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	60
shortleaf pine	Pinus echinata	WDH	High	2.2	4.0	1.2	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			2	61
black willow	Salix nigra	NSH	Low	1.1	3.4	3.0	Sm. dec.	Lg. inc.	Low	Rare	Very Poor	Fair		Infill +	2	62
bear oak; scrub oak	Quercus ilicifolia	NSLX	FIA	1	3.2	2.8	Unknown	Unknown	Medium	Rare	FIA Only	FIA Only			0	63
American chestnut	Castanea dentata	NSLX	FIA	3.5	3.1	0.6	Unknown	Unknown	Medium	Rare	FIA Only	FIA Only			0	64
Scots pine	Pinus sylvestris	NSH	FIA	0.6	2.0	1.3	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	65
shellbark hickory	Carya laciniosa	NSL	Low	0.2	1.9	1.6	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	66
shingle oak	Quercus imbricaria	NDH	Medium	0.5	1.9	3.5	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			2	67
red pine	Pinus resinosa	NSH	Medium	0.5	1.9	3.9	Lg. dec.	Lg. dec.	Low	Rare	Very Poor	Very Poor			0	68
southern red oak	Quercus falcata	WDL	Medium	0.7	1.3	1.2	Lg. inc.	Lg. inc.	High	Rare	Good	Good			2	69
sweetgum	Liquidambar styraciflua	WDH	High	0.4	1.0	1.6	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			2	70
swamp white oak	Quercus bicolor	NSL	Low	0.5	0.9	2.0	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	71
American holly	Ilex opaca	NSL	Medium	0.8	0.9	1.1	Sm. dec.	No change	Medium	Rare	Very Poor	Poor		Infill +	2	72
Norway maple	Acer platanoides	NSL	FIA	0.1	0.9	1.2	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	73
balsam fir	Abies balsamea	NDH	High	0.2	0.9	5.4	Very Lg. dec.	Very Lg. dec.	Low	Rare	Lost	Lost			0	74
wild plum	Prunus americana	NSLX	FIA	0.2	0.9	5.3	Unknown	Unknown	Medium	Rare	FIA Only	FIA Only			0	75
American mountain-ash	Sorbus americana	NSL	Low	1.3	0.8	0.7	Lg. dec.	Lg. dec.	Low	Rare	Very Poor	Very Poor			0	76
Ohio buckeye	Aesculus glabra	NSL	Low	0.5	0.8	0.7	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	77
red mulberry	Morus rubra	NSL	Low	0.5	0.7	1.0	Sm. inc.	Lg. inc.	Medium	Rare	Fair	Good	Infill +		2	78
black ash	Fraxinus nigra	WSH	Medium	0.3	0.5	1.6	Lg. dec.	Sm. dec.	Low	Rare	Very Poor	Very Poor			0	79
honeylocust	Gleditsia triacanthos	NSH	Low	0.2	0.4	2.6	Lg. inc.	Lg. inc.	High	Rare	Good	Good			2	80
pin oak	Quercus palustris	NSH	Low	0	0.4	0.5	Sm. inc.	Lg. inc.	Low	Rare	Poor	Fair		Infill +	2	81
chokecherry	Prunus virginiana	NSLX	FIA	0.3	0.4	0.7	Unknown	Unknown	Medium	Rare	FIA Only	FIA Only			0	82
mountain maple	Acer spicatum	NSL	Low	0.8	0.3	0.4	Sm. dec.	No change	High	Rare	Poor	Fair			0	83
eastern cottonwood	Populus deltoides	NSH	Low	0.1	0.3	1.3	Very Lg. dec.	Sm. dec.	Medium	Rare	Lost	Very Poor			0	84
sugarberry	Celtis laevigata	NDH	Medium	0.2	0.2	1.5	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			2	85
northern catalpa	Catalpa speciosa	NSHX	FIA	0.2	0.2	1.4	Unknown	Unknown	Medium	Rare	FIA Only	FIA Only			0	86
white mulberry	Morus alba	NSL	FIA	0.2	0.2	1.2	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	87
bigleaf magnolia	Magnolia macrophylla	NSL	Low	0.3	0.2	0.5	Sm. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	88
Atlantic white-cedar	Chamaecyparis thyoides	NSH	Low	0.2	0.2	0.9	No change	Lg. dec.	Low	Rare	Very Poor	Very Poor			0	89
blackjack oak	Quercus marilandica	NSL	Medium	0.2	0.1	0.9	Lg. inc.	Lg. inc.	High	Rare	Good	Good			2	90
ashe juniper	Juniperus ashei	NDH	High	0	0	0	New Habitat	New Habitat	NA	Absent	New Habitat	New Habitat			0	91
slash pine	Pinus elliottii	NDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate +	3	92
longleaf pine	Pinus palustris	NSH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate +	3	93
northern white-cedar	Thuja occidentalis	WSH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	94

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Common Name	Scientific Name	Range	MR	%Cell	FIAsum	FIAiv	ChngCl45	ChngCl85	Adap	Abund	Capabil45	Capabil85	SHIFT45	SHIFT85	SSO	N
florida maple	Acer barbatum	NSL	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	95
gray birch	Betula populifolia	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	96
cittamwood/gum bumelia	Sideroxylon lanuginosum ssp.	NSL	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat			3	97
water hickory	Carya aquatica	NSL	Medium	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	98
pecan	Carya illinoensis	NSH	Low	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat		Migrate +	3	99
black hickory	Carya texana	NDL	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			2	100
blue ash	Fraxinus quadrangulata	NSL	Low	0	0	0	Unknown	Unknown	Low	Absent	Unknown	Unknown			0	101
silverbell	Halesia spp.	NSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	102
southern magnolia	Magnolia grandiflora	NSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	103
water tupelo	Nyssa aquatica	NSH	Medium	0	0	0	Unknown	Unknown	Low	Absent	Unknown	Unknown			0	104
swamp tupelo	Nyssa biflora	NDH	Medium	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat			3	105
redbay	Persea borbonia	NSL	Low	0	0	0	Unknown	Unknown	High	Absent	Unknown	Unknown			0	106
cherrybark oak; swamp red o.	Quercus pagoda	NSL	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate +	3	107
overcup oak	Quercus lyrata	NSL	Medium	0	0	0	Unknown	New Habitat	Low	Absent	Unknown	New Habitat			3	108
bur oak	Quercus macrocarpa	NDH	Medium	0	0	0	Unknown	Unknown	High	Absent	Unknown	Unknown			0	109
water oak	Quercus nigra	WDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +	Migrate ++	3	110
willow oak	Quercus phellos	NSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate ++	3	111
Shumard oak	Quercus shumardii	NSL	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat		Migrate +	3	112
live oak	Quercus virginiana	NDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	113
bluejack oak	Quercus incana	NSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate +	3	114
winged elm	Ulmus alata	WDL	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +	Migrate ++	3	115
cedar elm	Ulmus crassifolia	NDH	Medium	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat			0	116