

	sq. km	sq. mi	FIA Plots
Area of Region	8,100.0	3,127.4	362

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	18	24	Increase	23	30	Very Good	9	9	Likely	5	5
Hickory	5			Medium	27	44	No Change	13	6	Good	19	22	Infill	3	7
Maple	5	Abundant	5	Low	32	13	Decrease	23	23	Fair	7	8	Migrate	3	4
Oak	10	Common	26	FIA	6		New	14	16	Poor	12	9			
Pine	5	Rare	34				Unknown	10	8	Very Poor	10	9			
Other	37	Absent	18							FIA Only	4	4			
	<b>65</b>		<b>83</b>		<b>83</b>	<b>81</b>		<b>83</b>	<b>83</b>	Unknown	4	2			
											<b>65</b>	<b>63</b>			

Potential Changes in Climate Variables

Temperature (°F)

	Scenario	2009	2039	2069	2099	
Annual Average	CCSM45	54.6	56.3	58.6	59.0	
	CCSM85	54.6	56.9	59.5	62.6	
	GFDL45	54.6	57.4	59.9	60.7	
	GFDL85	54.6	57.5	60.9	64.7	
	HAD45	54.6	57.3	60.7	62.2	
	HAD85	54.6	57.8	62.4	66.7	
Growing Season (May—Sep)	CCSM45	70.8	72.7	74.6	75.4	
	CCSM85	70.8	73.2	75.9	79.8	
	GFDL45	70.8	74.1	77.1	78.5	
	GFDL85	70.8	74.5	78.5	83.1	
	HAD45	70.8	74.1	77.4	79.3	
	HAD85	70.8	74.6	80.9	85.1	
Coldest Month Average	CCSM45	28.8	30.3	31.9	32.4	
	CCSM85	28.8	31.8	32.7	34.5	
	GFDL45	28.8	33.0	33.3	33.7	
	GFDL85	28.8	31.3	32.4	33.1	
	HAD45	28.8	30.2	32.7	32.8	
	HAD85	28.8	31.4	33.6	35.5	
Warmest Month Average	CCSM45	76.4	78.2	79.4	80.0	
	CCSM85	76.4	78.9	80.7	82.6	
	GFDL45	76.4	79.7	81.4	82.4	
	GFDL85	76.4	80.2	82.6	85.4	
	HAD45	76.4	80.3	83.0	83.9	
	HAD85	76.4	82.1	86.4	88.8	

Precipitation (in)

	Scenario	2009	2039	2069	2099	
Annual Total	CCSM45	47.4	47.0	51.7	50.0	
	CCSM85	47.4	49.6	50.4	53.8	
	GFDL45	47.4	54.2	56.6	59.2	
	GFDL85	47.4	52.3	57.5	60.6	
	HAD45	47.4	48.9	51.4	50.5	
	HAD85	47.4	49.1	46.8	51.3	
Growing Season (May—Sep)	CCSM45	20.9	19.8	21.6	20.6	
	CCSM85	20.9	20.3	19.7	20.5	
	GFDL45	20.9	23.8	23.3	24.0	
	GFDL85	20.9	22.6	23.2	23.6	
	HAD45	20.9	20.5	19.1	19.1	
	HAD85	20.9	20.4	16.5	17.0	

**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
sugar maple	Acer saccharum	WDH	High	96.3	1379.9	15.0	Sm. dec.	Sm. dec.	High	Abundant	Good	Good			1	1
white oak	Quercus alba	WDH	Medium	82.7	860.6	11.1	Sm. dec.	Sm. dec.	High	Abundant	Good	Good			1	2
yellow-poplar	Liriodendron tulipifera	WDH	High	85.2	846.9	10.5	Lg. dec.	Lg. dec.	High	Abundant	Good	Good			1	3
red maple	Acer rubrum	WDH	High	76.5	575.7	7.5	Sm. dec.	Sm. dec.	High	Abundant	Good	Good			1	4
black oak	Quercus velutina	WDH	High	76.5	544.9	7.5	No change	No change	Medium	Abundant	Good	Good			1	5
American beech	Fagus grandifolia	WDH	High	80.2	453.4	5.9	Lg. dec.	Lg. dec.	Medium	Common	Poor	Poor			0	6
pignut hickory	Carya glabra	WDL	Medium	77.8	415.8	5.6	Sm. dec.	Sm. dec.	Medium	Common	Poor	Poor			0	7
eastern redcedar	Juniperus virginiana	WDH	Medium	56.8	341.5	6.6	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good			1	8
sassafras	Sassafras albidum	WSL	Low	85.2	335.1	4.1	Sm. dec.	Sm. dec.	Medium	Common	Poor	Poor			0	9
white ash	Fraxinus americana	WDL	Medium	80.2	296.0	3.9	Sm. inc.	Sm. inc.	Low	Common	Fair	Fair			1	10
shagbark hickory	Carya ovata	WSL	Medium	77.8	284.0	3.8	Sm. dec.	Sm. dec.	Medium	Common	Poor	Poor			0	11
black cherry	Prunus serotina	WDL	Medium	70.4	275.9	4.2	No change	No change	Low	Common	Poor	Poor			0	12
sweetgum	Liquidambar styraciflua	WDH	High	22.2	213.7	9.6	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good			1	13
northern red oak	Quercus rubra	WDH	Medium	67.9	201.7	3.2	No change	No change	High	Common	Good	Good			1	14
chestnut oak	Quercus prinus	NDH	High	19.8	188.2	9.5	Sm. dec.	Sm. dec.	High	Common	Fair	Fair			1	15
sycamore	Platanus occidentalis	NSL	Low	51.9	179.7	3.8	Sm. inc.	Sm. inc.	Medium	Common	Good	Good			1	16
American elm	Ulmus americana	WDH	Medium	67.9	170.2	2.7	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good			1	17
blackgum	Nyssa sylvatica	WDL	Medium	72.8	160.6	2.3	Sm. inc.	Sm. inc.	High	Common	Very Good	Very Good			1	18
black walnut	Juglans nigra	WDH	Low	58	156.7	2.9	Sm. inc.	Sm. inc.	Medium	Common	Good	Good			1	19
Virginia pine	Pinus virginiana	NDH	High	16	155.0	9.7	Sm. dec.	Sm. dec.	Medium	Common	Poor	Poor			0	20
green ash	Fraxinus pennsylvanica	WSH	Low	24.7	122.5	6.0	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good			1	21
chinkapin oak	Quercus muehlenbergii	NSL	Medium	39.5	119.9	3.0	No change	No change	Medium	Common	Fair	Fair			1	22
boxelder	Acer negundo	WSH	Low	25.9	117.1	5.3	Sm. inc.	Sm. inc.	High	Common	Very Good	Very Good			1	23
eastern white pine	Pinus strobus	WDH	High	16	104.4	6.5	Lg. dec.	Lg. dec.	Low	Common	Very Poor	Very Poor			0	24
slippery elm	Ulmus rubra	WSL	Low	50.6	102.6	2.0	Sm. inc.	Sm. inc.	Medium	Common	Good	Good			1	25
bitternut hickory	Carya cordiformis	WSL	Low	43.2	102.0	2.9	Sm. inc.	Sm. inc.	High	Common	Very Good	Very Good			1	26
flowering dogwood	Cornus florida	WDL	Medium	53.1	91.7	1.7	Sm. inc.	No change	Medium	Common	Good	Fair			1	27
hackberry	Celtis occidentalis	WDH	Medium	35.8	82.7	2.8	Sm. inc.	Lg. inc.	High	Common	Very Good	Very Good			1	28
scarlet oak	Quercus coccinea	WDL	Medium	27.2	71.2	2.6	No change	Sm. dec.	Medium	Common	Fair	Poor			1	29
shortleaf pine	Pinus echinata	WDH	High	8.6	57.9	6.7	Sm. inc.	Sm. inc.	Medium	Common	Good	Good			1	30
common persimmon	Diospyros virginiana	NSL	Low	34.6	56.3	1.8	Lg. inc.	Lg. inc.	High	Common	Very Good	Very Good			1	31
eastern redbud	Cercis canadensis	NSL	Low	40.7	45.9	1.1	No change	Sm. inc.	Medium	Rare	Poor	Fair			1	32
post oak	Quercus stellata	WDH	High	11.1	45.8	4.1	Lg. inc.	Lg. inc.	High	Rare	Good	Good	Infill ++	Infill ++	1	33
black locust	Robinia pseudoacacia	NDH	Low	8.6	42.0	4.9	No change	Sm. inc.	Medium	Rare	Poor	Fair			1	34
silver maple	Acer saccharinum	NSH	Low	9.9	37.2	3.8	No change	No change	High	Rare	Fair	Fair	Infill +	Infill +	1	35
winged elm	Ulmus alata	WDL	Medium	17.3	36.5	2.1	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			1	36
eastern hophornbeam; ironw	Ostrya virginiana	WSL	Low	29.6	28.4	1.0	Lg. inc.	Lg. inc.	High	Rare	Good	Good			1	37
American hornbeam; muscle	Carpinus caroliniana	WSL	Low	24.7	27.5	1.1	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			1	38
mockernut hickory	Carya alba	WDL	Medium	16	23.7	2.0	Lg. inc.	Lg. inc.	High	Rare	Good	Good			1	39
shingle oak	Quercus imbricaria	NDH	Medium	11.1	23.1	3.3	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	40
pawpaw	Asimina triloba	NSL	Low	18.5	20.4	1.4	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	41
bigtooth aspen	Populus grandidentata	NSL	Medium	11.1	20.4	1.8	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	42
eastern cottonwood	Populus deltoides	NSH	Low	3.7	17.1	4.6	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			2	43
American basswood	Tilia americana	WSL	Medium	9.9	15.7	1.6	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	44
red pine	Pinus resinosa	NSH	Medium	2.5	13.0	5.3	Lg. dec.	Lg. dec.	Low	Rare	Very Poor	Very Poor			0	45
honeylocust	Gleditsia triacanthos	NSH	Low	6.2	12.0	2.0	No change	Lg. inc.	High	Rare	Fair	Good		Infill ++	1	46
Ohio buckeye	Aesculus glabra	NSL	Low	4.9	11.4	2.3	Lg. dec.	Lg. dec.	Medium	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
pin oak	Quercus palustris	NSH	Low	8.6	9.4	1.1	No change	Sm. inc.	Low	Rare	Very Poor	Poor		Infill +	1	48
ailanthus	Ailanthus altissima	NSL	FIA	3.7	6.1	1.6	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	49
Osage-orange	Maclura pomifera	NDH	Medium	8.6	5.0	1.4	Sm. dec.	Lg. inc.	High	Rare	Poor	Good		Infill ++	2	50
red mulberry	Morus rubra	NSL	Low	4.9	3.9	0.8	No change	Sm. inc.	Medium	Rare	Poor	Fair	Infill +	Infill +	1	51
blue ash	Fraxinus quadrangulata	NSL	Low	1.2	3.8	3.1	Sm. dec.	Sm. dec.	Low	Rare	Very Poor	Very Poor			0	52
Kentucky coffeetree	Gymnocladus dioicus	NSLX	FIA	2.5	3.7	1.5	Unknown	Unknown	Medium	Rare	FIA Only	FIA Only			0	53
sugarberry	Celtis laevigata	NDH	Medium	1.2	3.6	2.9	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			2	54
sourwood	Oxydendrum arboreum	NDL	High	1.2	3.5	2.8	Sm. inc.	Sm. inc.	High	Rare	Good	Good			2	55
Shumard oak	Quercus shumardii	NSL	Low	1.2	3.4	2.8	No change	Lg. inc.	High	Rare	Fair	Good			2	56
river birch	Betula nigra	NSL	Low	2.5	2.6	1.0	No change	Lg. inc.	Medium	Rare	Poor	Good		Infill ++	2	57
yellow buckeye	Aesculus flava	NSL	Low	2.5	2.2	0.9	Very Lg. dec.	Very Lg. dec.	Low	Rare	Lost	Lost			0	58
serviceberry	Amelanchier spp.	NSL	Low	2.5	1.6	0.6	Very Lg. dec.	Very Lg. dec.	Medium	Rare	Lost	Lost			0	59
Scots pine	Pinus sylvestris	NSH	FIA	2.5	1.4	0.6	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	60
American chestnut	Castanea dentata	NSLX	FIA	1.2	1.2	1.0	Unknown	Unknown	Medium	Rare	FIA Only	FIA Only			0	61
northern catalpa	Catalpa speciosa	NSHX	FIA	1.2	1.1	0.9	Unknown	Unknown	Medium	Rare	FIA Only	FIA Only			0	62
black hickory	Carya texana	NDL	High	1.2	0.7	0.6	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			2	63
black maple	Acer nigrum	NSH	Low	1.2	0.4	0.3	Lg. dec.	Lg. dec.	High	Rare	Poor	Poor			0	64
butternut	Juglans cinerea	NSLX	FIA	1.2	0.3	0.2	Unknown	Unknown	Low	Rare	FIA Only	FIA Only			0	65
ashe juniper	Juniperus ashei	NDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			0	66
red spruce	Picea rubens	NDH	High	0	0	0	Unknown	Unknown	Low	Absent	Unknown	Unknown			0	67
loblolly pine	Pinus taeda	WDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate ++	Migrate ++	3	68
striped maple	Acer pensylvanicum	NSL	Medium	0	0	0	Unknown	New Habitat	Medium	Absent	Unknown	New Habitat			3	69
mountain maple	Acer spicatum	NSL	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat			3	70
cittamwood/gum bumelia	Sideroxylon lanuginosum ssp.	NSL	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat			3	71
pecan	Carya illinoensis	NSH	Low	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat		Migrate +	3	72
shellbark hickory	Carya laciniosa	NSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Likely +	Likely +	3	73
black ash	Fraxinus nigra	WSH	Medium	0	0	0	Unknown	New Habitat	Low	Absent	Unknown	New Habitat			3	74
pin cherry	Prunus pensylvanica	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	75
southern red oak	Quercus falcata	WDL	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Likely +	Likely +	3	76
cherrybark oak; swamp red o.	Quercus pagoda	NSL	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Likely +	Likely +	3	77
blackjack oak	Quercus marilandica	NSL	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Likely +	Likely +	3	78
water oak	Quercus nigra	WDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +	Migrate ++	3	79
willow oak	Quercus phellos	NSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	80
live oak	Quercus virginiana	NDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			0	81
black willow	Salix nigra	NSH	Low	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat	Likely +	Likely +	3	82
cedar elm	Ulmus crassifolia	NDH	Medium	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat			3	83