

sq. km sq. mi FIA Plots
Area of Region 20,849 8,050.0 411

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	20	24	Increase	16	16	Very Good	5	7	Likely	1	1
Hickory	5			Medium	27	48	No Change	15	18	Good	14	11	Infill	9	12
Maple	6	Abundant	3	Low	34	14	Decrease	31	28	Fair	11	14	Migrate	6	8
Oak	10	Common	24	FIA	11		New	12	13	Poor	12	12			
Pine	5	Rare	46				Unknown	18	17	Very Poor	18	13			
Other	44	Absent	19							FIA Only	5	5			
	73		92		92	86		92	92	Unknown	7	6			
											72	68			

Potential Changes in Climate Variables

Temperature (°F)

	Scenario	2009	2039	2069	2099	
Annual Average	CCSM45	47.0	48.4	50.5	50.6	
	CCSM85	47.0	48.9	50.9	53.5	
	GFDL45	47.0	49.6	51.7	52.4	
	GFDL85	47.0	49.7	52.5	55.9	
	HAD45	47.0	49.4	52.2	53.4	
HAD85	47.0	49.6	53.3	57.1		
Growing Season (May—Sep)	CCSM45	60.2	61.6	63.4	63.8	
	CCSM85	60.2	62.0	64.1	67.3	
	GFDL45	60.2	63.1	65.8	66.9	
	GFDL85	60.2	63.4	66.9	70.8	
	HAD45	60.2	62.9	65.5	67.2	
HAD85	60.2	62.9	67.6	71.8		
Coldest Month Average	CCSM45	26.5	27.7	29.1	29.4	
	CCSM85	26.5	28.6	29.5	30.9	
	GFDL45	26.5	29.2	29.8	30.5	
	GFDL85	26.5	29.0	30.0	31.0	
	HAD45	26.5	27.2	29.5	29.6	
HAD85	26.5	28.2	30.0	31.9		
Warmest Month Average	CCSM45	64.6	66.1	67.2	67.5	
	CCSM85	64.6	66.7	68.1	69.8	
	GFDL45	64.6	67.1	68.9	69.7	
	GFDL85	64.6	68.0	69.9	72.2	
	HAD45	64.6	67.7	69.7	70.8	
HAD85	64.6	68.6	71.9	74.7		

Precipitation (in)

	Scenario	2009	2039	2069	2099	
Annual Total	CCSM45	31.6	33.4	33.4	34.5	
	CCSM85	31.6	33.2	34.2	36.0	
	GFDL45	31.6	34.9	36.6	37.7	
	GFDL85	31.6	32.9	32.1	38.9	
	HAD45	31.6	32.7	32.9	32.8	
HAD85	31.6	33.0	30.7	33.5		
Growing Season (May—Sep)	CCSM45	15.3	16.2	15.8	16.3	
	CCSM85	15.3	15.3	15.7	15.4	
	GFDL45	15.3	16.8	16.8	17.3	
	GFDL85	15.3	15.5	16.4	16.7	
	HAD45	15.3	16.2	14.0	14.9	
HAD85	15.3	15.3	12.7	13.2		

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
black cherry	Prunus serotina	WDL	Medium	86.3	909.5	11.5	Lg. dec.	Lg. dec.	Low	Abundant	Poor	Poor			0	1
red maple	Acer rubrum	WDH	High	83.6	864.1	11.4	Lg. dec.	Lg. dec.	High	Abundant	Good	Good			1	2
sugar maple	Acer saccharum	WDH	High	64.2	652.8	9.7	No change	No change	High	Abundant	Very Good	Very Good			1	3
American elm	Ulmus americana	WDH	Medium	79.2	470.7	6.0	No change	No change	Medium	Common	Fair	Fair			1	4
yellow-poplar	Liriodendron tulipifera	WDH	High	44.6	425.1	8.5	No change	Sm. dec.	High	Common	Good	Fair			1	5
white ash	Fraxinus americana	WDL	Medium	67.1	419.5	6.3	No change	No change	Low	Common	Poor	Poor			0	6
white oak	Quercus alba	WDH	Medium	44.8	269.6	6.1	Sm. inc.	Sm. inc.	High	Common	Very Good	Very Good			1	7
black locust	Robinia pseudoacacia	NDH	Low	32.2	264.7	7.6	Sm. dec.	No change	Medium	Common	Poor	Fair			1	8
sassafras	Sassafras albidum	WSL	Low	44.3	228.4	4.9	No change	No change	Medium	Common	Fair	Fair			1	9
black walnut	Juglans nigra	WDH	Low	41.2	215.8	4.9	Sm. inc.	Sm. inc.	Medium	Common	Good	Good			1	10
northern red oak	Quercus rubra	WDH	Medium	51.7	215.1	4.1	Sm. inc.	No change	High	Common	Very Good	Good			1	11
slippery elm	Ulmus rubra	WSL	Low	47.1	189.4	3.7	No change	No change	Medium	Common	Fair	Fair			1	12
American beech	Fagus grandifolia	WDH	High	44	181.6	4.5	No change	Lg. dec.	Medium	Common	Fair	Poor			1	13
black oak	Quercus velutina	WDH	High	43.1	177.9	4.5	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good			1	14
bigtooth aspen	Populus grandidentata	NSL	Medium	27.2	177.1	6.7	Lg. dec.	Lg. dec.	Medium	Common	Poor	Poor			0	15
silver maple	Acer saccharinum	NSH	Low	13.5	145.3	14.0	Lg. dec.	Sm. dec.	High	Common	Fair	Fair			1	16
blackgum	Nyssa sylvatica	WDL	Medium	32.2	143.5	4.3	Sm. dec.	No change	High	Common	Fair	Good			1	17
ailanthus	Ailanthus altissima	NSL	FIA	19.4	136.9	5.8	Unknown	Unknown	NA	Common	NNIS	NNIS			0	18
shagbark hickory	Carya ovata	WSL	Medium	42.5	130.8	3.7	Sm. inc.	No change	Medium	Common	Good	Fair			1	19
bitternut hickory	Carya cordiformis	WSL	Low	37.8	129.0	4.4	No change	Sm. inc.	High	Common	Good	Very Good			1	20
eastern white pine	Pinus strobus	WDH	High	16.5	124.3	9.9	Lg. dec.	Very Lg. dec.	Low	Common	Very Poor	Lost			0	21
green ash	Fraxinus pennsylvanica	WSH	Low	43.8	122.1	4.3	Sm. inc.	Lg. inc.	Medium	Common	Good	Very Good			1	22
sycamore	Platanus occidentalis	NSL	Low	22.8	99.5	5.5	Sm. inc.	Lg. inc.	Medium	Common	Good	Very Good			1	23
black willow	Salix nigra	NSH	Low	6.4	86.0	15.6	Lg. dec.	Sm. dec.	Low	Common	Very Poor	Poor	Infill +		0	24
boxelder	Acer negundo	WSH	Low	20.5	81.7	4.0	Sm. inc.	Lg. inc.	High	Common	Very Good	Very Good			1	25
eastern hophornbeam; ironw	Ostrya virginiana	WSL	Low	28.8	76.1	3.1	Lg. dec.	Sm. dec.	High	Common	Fair	Fair			1	26
eastern cottonwood	Populus deltoides	NSH	Low	8.2	67.5	6.7	Sm. dec.	Sm. dec.	Medium	Common	Poor	Poor			0	27
flowering dogwood	Cornus florida	WDL	Medium	28	49.2	1.8	Sm. inc.	Sm. inc.	Medium	Rare	Fair	Fair			1	28
moccorn hickory	Carya alba	WDL	Medium	19.4	48.6	2.5	Lg. inc.	Lg. inc.	High	Rare	Good	Good			1	29
pignut hickory	Carya glabra	WDL	Medium	21.6	47.3	2.8	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			1	30
pin oak	Quercus palustris	NSH	Low	8.7	42.3	3.9	Sm. dec.	No change	Low	Rare	Very Poor	Very Poor			0	31
chestnut oak	Quercus prinus	NDH	High	6.8	37.4	3.7	No change	No change	High	Rare	Fair	Fair	Infill +	Infill +	2	32
American basswood	Tilia americana	WSL	Medium	16.2	30.6	3.1	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	33
Osage-orange	Maclura pomifera	NDH	Medium	7.2	30.1	8.3	No change	No change	High	Rare	Fair	Fair	Infill +	Infill +	1	34
yellow buckeye	Aesculus flava	NSL	Low	4.7	28.0	3.3	Lg. dec.	Lg. dec.	Low	Rare	Very Poor	Very Poor			0	35
shingle oak	Quercus imbricaria	NDH	Medium	5	26.6	3.2	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			2	36
honeylocust	Gleditsia triacanthos	NSH	Low	8.9	23.9	4.6	No change	No change	High	Rare	Fair	Fair	Infill +	Infill +	1	37
American hornbeam; musclev	Carpinus caroliniana	WSL	Low	11.6	21.7	1.6	Lg. dec.	No change	Medium	Rare	Very Poor	Poor			1	38
scarlet oak	Quercus coccinea	WDL	Medium	8.8	20.8	2.7	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	1	39
Siberian elm	Ulmus pumila	NDH	FIA	0.3	20.6	28.5	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	40
red pine	Pinus resinosa	NSH	Medium	6.6	18.6	3.8	Lg. dec.	Very Lg. dec.	Low	Rare	Very Poor	Lost			0	41
Virginia pine	Pinus virginiana	NDH	High	2.6	18.6	5.0	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	2	42
swamp white oak	Quercus bicolor	NSL	Low	1.1	17.8	4.1	Sm. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			2	43
cucumbertree	Magnolia acuminata	NSL	Low	6.4	16.3	3.2	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	44
wild plum	Prunus americana	NSLX	FIA	0.1	16.0	3.9	Unknown	Unknown	Medium	Rare	FIA Only	FIA Only			0	45
black maple	Acer nigrum	NSH	Low	5.1	12.7	2.3	Lg. dec.	Lg. dec.	High	Rare	Poor	Poor			0	46
Norway spruce	Picea abies	NSH	FIA	3.4	12.0	6.4	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	47

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eastern redbud	Cercis canadensis	NSL	Low	4.1	10.7	2.1	No change	Sm. inc.	Medium	Rare	Poor	Fair	Infill +	Infill +	1	48
Scots pine	Pinus sylvestris	NSH	FIA	5.6	10.3	9.4	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	49
sweetgum	Liquidambar styraciflua	WDH	High	2.2	10.0	6.7	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good	Infill ++	Infill ++	2	50
Ohio buckeye	Aesculus glabra	NSL	Low	10.3	9.6	1.9	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	51
hackberry	Celtis occidentalis	WDH	Medium	9.2	9.4	1.3	Lg. inc.	Lg. inc.	High	Rare	Good	Good	Infill ++	Infill ++	2	52
red mulberry	Morus rubra	NSL	Low	2.4	8.2	8.8	No change	No change	Medium	Rare	Poor	Poor		Infill +	2	53
river birch	Betula nigra	NSL	Low	1.1	6.7	4.1	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	54
pawpaw	Asimina triloba	NSL	Low	1.7	6.4	1.8	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	55
bur oak	Quercus macrocarpa	NDH	Medium	4.6	4.7	3.0	Sm. dec.	No change	High	Rare	Poor	Fair		Infill +	2	56
chokecherry	Prunus virginiana	NSLX	FIA	3.2	4.5	3.7	Unknown	Unknown	Medium	Rare	FIA Only	FIA Only			0	57
quaking aspen	Populus tremuloides	WDH	High	2.3	4.3	2.1	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	58
black ash	Fraxinus nigra	WSH	Medium	2.9	3.9	5.8	Very Lg. dec.	Very Lg. dec.	Low	Rare	Lost	Lost			0	59
shellbark hickory	Carya laciniosa	NSL	Low	1.4	3.0	2.1	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	60
eastern hemlock	Tsuga canadensis	NSH	High	2.4	2.7	4.2	Lg. dec.	Very Lg. dec.	Low	Rare	Very Poor	Lost			0	61
common persimmon	Diospyros virginiana	NSL	Low	0.5	2.5	5.2	Sm. inc.	Lg. inc.	High	Rare	Good	Good			2	62
northern catalpa	Catalpa speciosa	NSHX	FIA	0.5	2.5	5.1	Unknown	Unknown	Medium	Rare	FIA Only	FIA Only			0	63
rock elm	Ulmus thomasii	NSLX	FIA	0.5	2.1	4.4	Unknown	Unknown	Low	Rare	FIA Only	FIA Only			0	64
chinkapin oak	Quercus muehlenbergii	NSL	Medium	0.4	1.9	3.6	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			2	65
butternut	Juglans cinerea	NSLX	FIA	1	1.7	1.8	Unknown	Unknown	Low	Rare	FIA Only	FIA Only			0	66
sourwood	Oxydendrum arboreum	NDL	High	0.3	1.7	0.5	Sm. dec.	Sm. dec.	High	Rare	Poor	Poor	Infill +	Infill +	2	67
pitch pine	Pinus rigida	NSH	High	1	1.6	0.8	Very Lg. dec.	Very Lg. dec.	Medium	Rare	Lost	Lost			0	68
serviceberry	Amelanchier spp.	NSL	Low	2.9	1.5	1.4	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	69
paulownia	Paulownia tomentosa	NSL	FIA	0.3	0.5	0.6	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	70
sweet birch	Betula lenta	NDH	High	3.8	0.2	0.9	Lg. dec.	Lg. dec.	Low	Rare	Very Poor	Very Poor			0	71
eastern redcedar	Juniperus virginiana	WDH	Medium	0.1	0.2	0.1	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			2	72
Norway maple	Acer platanoides	NSL	FIA	1.9	0.1	0.6	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	73
shortleaf pine	Pinus echinata	WDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +	Migrate ++	3	74
loblolly pine	Pinus taeda	WDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Likely +	Likely +	3	75
striped maple	Acer pensylvanicum	NSL	Medium	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	76
yellow birch	Betula alleghaniensis	NDL	High	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	77
cittamwood/gum bumelia	Sideroxylon lanuginosum ssp.	NSL	Low	0	0	0	Unknown	New Habitat	High	Absent	Unknown	New Habitat			0	78
pecan	Carya illinoensis	NSH	Low	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat			3	79
black hickory	Carya texana	NDL	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	80
sugarberry	Celtis laevigata	NDH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate ++	3	81
blue ash	Fraxinus quadrangulata	NSL	Low	0	0	0	Unknown	Unknown	Low	Absent	Unknown	Unknown			0	82
loblolly-bay	Gordonia lasianthus	NSH	Medium	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	83
bigleaf magnolia	Magnolia macrophylla	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	84
pin cherry	Prunus pensylvanica	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	85
southern red oak	Quercus falcata	WDL	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Migrate +	Migrate ++	3	86
blackjack oak	Quercus marilandica	NSL	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Migrate +	Migrate ++	3	87
water oak	Quercus nigra	WDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate +	3	88
Shumard oak	Quercus shumardii	NSL	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	89
post oak	Quercus stellata	WDH	High	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Migrate ++	Migrate ++	3	90
bluejack oak	Quercus incana	NSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			0	91
winged elm	Ulmus alata	WDL	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +	Migrate ++	3	92