

	sq. km	sq. mi	FIA Plots
Area of Region	23,768	9,176.7	676

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														
Hickory	5														
Maple	7	Abundant	6	High	21	26	Increase	23	31	Very Good	6	8	Likely	1	1
Oak	12	Common	27	Medium	27	50	No Change	13	7	Good	22	26	Infill	6	9
Pine	5	Rare	46	Low	38	14	Decrease	34	32	Fair	11	7	Migrate	2	6
Other	47	Absent	16	FIA	9		New	13	14	Poor	9	10			
	79		95		95	90	Unknown	12	11	Very Poor	21	19			
								95	95	FIA Only	4	4			
										Unknown	3	2			
											76	76			

Potential Changes in Climate Variables

Temperature (°F)

	Scenario	2009	2039	2069	2099	
Annual Average	CCSM45	53.1	55.0	57.4	57.6	
	CCSM85	53.1	55.5	57.9	61.1	
	GFDL45	53.1	55.8	58.8	59.7	
	GFDL85	53.1	56.4	59.9	64.0	
	HAD45	53.1	55.7	59.2	60.6	
	HAD85	53.1	56.1	60.5	65.0	
Growing Season May—Sep	CCSM45	68.5	70.5	72.7	73.3	
	CCSM85	68.5	70.9	73.5	77.6	
	GFDL45	68.5	71.7	75.6	76.9	
	GFDL85	68.5	72.7	77.0	81.6	
	HAD45	68.5	71.8	75.2	77.0	
	HAD85	68.5	72.0	77.8	82.6	
Coldest Month Average	CCSM45	29.2	31.1	32.6	33.0	
	CCSM85	29.2	32.1	33.2	34.7	
	GFDL45	29.2	32.8	33.4	34.1	
	GFDL85	29.2	32.1	33.1	34.2	
	HAD45	29.2	30.0	32.3	32.5	
	HAD85	29.2	30.8	32.6	34.6	
Warmest Month Average	CCSM45	74.0	76.0	77.3	77.7	
	CCSM85	74.0	76.4	78.1	80.1	
	GFDL45	74.0	77.4	79.6	80.7	
	GFDL85	74.0	78.7	81.4	84.0	
	HAD45	74.0	77.8	80.3	81.6	
	HAD85	74.0	79.1	83.0	86.1	

Precipitation (in)

	Scenario	2009	2039	2069	2099	
Annual Total	CCSM45	44.8	47.9	48.7	49.9	
	CCSM85	44.8	48.4	50.0	53.8	
	GFDL45	44.8	48.9	50.0	52.4	
	GFDL85	44.8	46.3	51.3	52.9	
	HAD45	44.8	46.3	46.5	45.9	
	HAD85	44.8	46.5	43.7	46.3	
Growing Season May—Sep	CCSM45	20.8	22.4	22.4	22.8	
	CCSM85	20.8	21.9	21.7	22.9	
	GFDL45	20.8	22.6	21.8	22.8	
	GFDL85	20.8	20.5	21.4	21.9	
	HAD45	20.8	22.1	19.5	20.3	
	HAD85	20.8	21.2	18.3	19.2	

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
sugar maple	Acer saccharum	WDH	High	82.5	1114.7	10.0	Sm. dec.	Sm. dec.	High	Abundant	Good	Good			1	1
red maple	Acer rubrum	WDH	High	83.8	1089.3	9.4	Sm. dec.	Lg. dec.	High	Abundant	Good	Good			1	2
yellow-poplar	Liriodendron tulipifera	WDH	High	76.8	1035.1	9.9	Sm. dec.	Lg. dec.	High	Abundant	Good	Good			1	3
white oak	Quercus alba	WDH	Medium	72.7	1018.7	10.9	No change	No change	High	Abundant	Very Good	Very Good			1	4
chestnut oak	Quercus prinus	NDH	High	55.8	518.0	7.0	Sm. dec.	Sm. dec.	High	Abundant	Good	Good			1	5
black cherry	Prunus serotina	WDL	Medium	51.7	515.7	6.5	Sm. dec.	Sm. dec.	Low	Abundant	Fair	Fair			0	6
white ash	Fraxinus americana	WDL	Medium	71	492.3	5.3	No change	No change	Low	Common	Poor	Poor			0	7
black oak	Quercus velutina	WDH	High	67.5	413.7	5.0	Sm. inc.	Lg. inc.	Medium	Common	Good	Very Good			1	8
American beech	Fagus grandifolia	WDH	High	60.4	392.5	5.1	Sm. dec.	Sm. dec.	Medium	Common	Poor	Poor			0	9
pignut hickory	Carya glabra	WDL	Medium	66.2	371.5	4.6	No change	No change	Medium	Common	Fair	Fair			1	10
northern red oak	Quercus rubra	WDH	Medium	60.9	352.9	4.2	Sm. inc.	Sm. inc.	High	Common	Very Good	Very Good			1	11
black locust	Robinia pseudoacacia	NDH	Low	40.5	334.9	5.3	Sm. dec.	No change	Medium	Common	Poor	Fair			1	12
mockernut hickory	Carya alba	WDL	Medium	61.6	331.9	4.3	Sm. inc.	Sm. inc.	High	Common	Very Good	Very Good			1	13
American elm	Ulmus americana	WDH	Medium	39.4	275.6	4.6	No change	Sm. inc.	Medium	Common	Fair	Good			1	14
Virginia pine	Pinus virginiana	NDH	High	29.4	246.7	6.8	No change	Sm. dec.	Medium	Common	Fair	Poor			1	15
sycamore	Platanus occidentalis	NSL	Low	31.9	215.1	5.2	Sm. inc.	Sm. inc.	Medium	Common	Good	Good			1	16
shagbark hickory	Carya ovata	WSL	Medium	57.3	213.9	2.8	No change	No change	Medium	Common	Fair	Fair			1	17
slippery elm	Ulmus rubra	WSL	Low	46.1	205.5	3.5	No change	Sm. inc.	Medium	Common	Fair	Good			1	18
black walnut	Juglans nigra	WDH	Low	40.7	196.2	3.7	Sm. inc.	Sm. inc.	Medium	Common	Good	Good			1	19
sassafras	Sassafras albidum	WSL	Low	43.7	192.4	3.1	Sm. inc.	Sm. inc.	Medium	Common	Good	Good			1	20
scarlet oak	Quercus coccinea	WDL	Medium	33.2	185.8	4.6	No change	Sm. dec.	Medium	Common	Fair	Poor			1	21
blackgum	Nyssa sylvatica	WDL	Medium	52.7	178.5	2.8	Sm. inc.	Sm. inc.	High	Common	Very Good	Very Good			1	22
boxelder	Acer negundo	WSH	Low	22	156.5	5.5	No change	Sm. inc.	High	Common	Good	Very Good			1	23
yellow buckeye	Aesculus flava	NSL	Low	23	120.1	4.5	Lg. dec.	Lg. dec.	Low	Common	Very Poor	Very Poor			0	24
sourwood	Oxydendrum arboreum	NDL	High	32	118.8	2.8	No change	Sm. dec.	High	Common	Good	Fair			1	25
eastern white pine	Pinus strobus	WDH	High	6.6	83.2	6.9	Lg. dec.	Lg. dec.	Low	Common	Very Poor	Very Poor			0	26
American basswood	Tilia americana	WSL	Medium	22.5	80.2	2.8	Lg. dec.	Lg. dec.	Medium	Common	Poor	Poor			0	27
bitternut hickory	Carya cordiformis	WSL	Low	25.2	76.3	2.1	Lg. inc.	Lg. inc.	High	Common	Very Good	Very Good			1	28
bigtooth aspen	Populus grandidentata	NSL	Medium	13.2	60.2	3.7	Lg. dec.	Lg. dec.	Medium	Common	Poor	Poor			0	29
sweet birch	Betula lenta	NDH	High	12.1	59.7	2.7	Lg. dec.	Lg. dec.	Low	Common	Very Poor	Very Poor			0	30
eastern redbud	Cercis canadensis	NSL	Low	26.4	52.8	1.5	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good			1	31
silver maple	Acer saccharinum	NSH	Low	3.1	50.3	8.4	Sm. dec.	No change	High	Common	Fair	Good		Infill ++	1	32
cucumbertree	Magnolia acuminata	NSL	Low	17.4	50.3	2.3	Lg. dec.	Lg. dec.	Medium	Common	Poor	Poor			0	33
American hornbeam; muscle	Carpinus caroliniana	WSL	Low	22.2	49.4	1.8	Sm. dec.	Sm. inc.	Medium	Rare	Very Poor	Fair			1	34
ailanthus	Ailanthus altissima	NSL	FIA	14.4	49.3	2.5	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	35
flowering dogwood	Cornus florida	WDL	Medium	35.1	46.9	1.1	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			1	36
pitch pine	Pinus rigida	NSH	High	9.8	42.4	3.6	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	37
post oak	Quercus stellata	WDH	High	6.6	38.8	5.2	Lg. inc.	Lg. inc.	High	Rare	Good	Good	Infill ++	Infill ++	2	38
eastern hophornbeam; ironw	Ostrya virginiana	WSL	Low	26.7	37.2	1.2	Sm. inc.	Lg. inc.	High	Rare	Good	Good			1	39
loblolly pine	Pinus taeda	WDH	High	2.7	36.3	11.6	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good	Infill ++	Infill ++	2	40
pawpaw	Asimina triloba	NSL	Low	13	32.5	1.5	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	41
eastern hemlock	Tsuga canadensis	NSH	High	3.5	31.4	2.7	Sm. dec.	Sm. dec.	Low	Rare	Very Poor	Very Poor			2	42
hackberry	Celtis occidentalis	WDH	Medium	8.3	28.0	2.1	No change	Sm. inc.	High	Rare	Fair	Good	Infill +	Infill ++	1	43
common persimmon	Diospyros virginiana	NSL	Low	9.2	21.7	1.6	No change	Lg. inc.	High	Rare	Fair	Good			1	44
eastern redcedar	Juniperus virginiana	WDH	Medium	5.1	13.0	2.3	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good	Infill ++	Infill ++	2	45
green ash	Fraxinus pennsylvanica	WSH	Low	6.1	12.9	1.2	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good	Infill ++	Infill ++	1	46
black maple	Acer nigrum	NSH	Low	3.1	9.0	2.0	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	
black willow	Salix nigra	NSH	Low	1.7	7.0	4.2	Sm. dec.	Sm. inc.	Low	Rare	Very Poor	Poor		Infill +	2	48	
paulownia	Paulownia tomentosa	NSL	FIA	2	7.0	1.7	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	49	
serviceberry	Amelanchier spp.	NSL	Low	5.5	5.4	0.7	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	50	
shingle oak	Quercus imbricaria	NDH	Medium	0.9	5.0	3.3	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			2	51	
yellow birch	Betula alleghaniensis	NDL	High	0.5	4.7	0.6	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	52	
shellbark hickory	Carya laciniosa	NSL	Low	0	4.3	1.2	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	53	
Osage-orange	Maclura pomifera	NDH	Medium	0.3	3.8	0.8	Sm. dec.	Lg. inc.	High	Rare	Poor	Good			2	54	
shortleaf pine	Pinus echinata	WDH	High	1.4	2.8	1.4	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			2	55	
swamp white oak	Quercus bicolor	NSL	Low	1.3	2.5	2.0	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	56	
Norway spruce	Picea abies	NSH	FIA	0.4	2.3	5.5	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	57	
chinkapin oak	Quercus muehlenbergii	NSL	Medium	1.5	2.3	1.3	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			2	58	
wild plum	Prunus americana	NSLX	FIA	0.3	2.2	3.9	Unknown	Unknown	Medium	Rare	FIA Only	FIA Only			0	59	
Ohio buckeye	Aesculus glabra	NSL	Low	0.8	1.6	0.6	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	60	
mountain or Fraser magnolia	Magnolia fraseri	NSL	Low	0.6	1.6	0.6	Sm. dec.	Sm. dec.	Low	Rare	Very Poor	Very Poor			0	61	
American holly	Ilex opaca	NSL	Medium	0.2	1.3	0.5	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	62	
southern red oak	Quercus falcata	WDL	Medium	0.6	1.3	1.4	Lg. inc.	Lg. inc.	High	Rare	Good	Good			2	63	
Norway maple	Acer platanoides	NSL	FIA	0.1	1.1	0.6	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	64	
honeylocust	Gleditsia triacanthos	NSH	Low	0.4	1.1	2.6	Lg. inc.	Lg. inc.	High	Rare	Good	Good			2	65	
butternut	Juglans cinerea	NSLX	FIA	1.2	1.1	0.8	Unknown	Unknown	Low	Rare	FIA Only	FIA Only			0	66	
black ash	Fraxinus nigra	WSH	Medium	0.4	1.1	2.5	Lg. dec.	Lg. dec.	Low	Rare	Very Poor	Very Poor			0	67	
striped maple	Acer pensylvanicum	NSL	Medium	0.5	1.0	0.5	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	68	
pin oak	Quercus palustris	NSH	Low	0.1	1.0	0.5	Sm. inc.	Lg. inc.	Low	Rare	Poor	Fair		Infill +	2	69	
red mulberry	Morus rubra	NSL	Low	0.9	0.9	0.6	Sm. inc.	Lg. inc.	Medium	Rare	Fair	Good		Infill +	2	70	
eastern cottonwood	Populus deltoides	NSH	Low	0.3	0.8	1.3	Very Lg. dec.	Sm. dec.	Medium	Rare	Lost	Very Poor			0	71	
pin cherry	Prunus pensylvanica	NSL	Low	0.6	0.8	0.7	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	72	
river birch	Betula nigra	NSL	Low	0.4	0.8	1.9	Sm. dec.	No change	Medium	Rare	Very Poor	Poor		Infill +	2	73	
sugarberry	Celtis laevigata	NDH	Medium	0.4	0.6	1.5	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			2	74	
chokecherry	Prunus virginiana	NSLX	FIA	0.2	0.6	0.6	Unknown	Unknown	Medium	Rare	FIA Only	FIA Only			0	75	
white mulberry	Morus alba	NSL	FIA	0.4	0.5	1.2	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	76	
American chestnut	Castanea dentata	NSLX	FIA	0.7	0.5	0.4	Unknown	Unknown	Medium	Rare	FIA Only	FIA Only			0	77	
Atlantic white-cedar	Chamaecyparis thyoides	NSH	Low	0.4	0.4	0.9	No change	Lg. dec.	Low	Rare	Very Poor	Very Poor			0	78	
blackjack oak	Quercus marilandica	NSL	Medium	0.2	0.4	0.4	Lg. inc.	Lg. inc.	High	Rare	Good	Good			2	79	
slash pine	Pinus elliotii	NDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	80	
longleaf pine	Pinus palustris	NSH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate +	3	81	
florida maple	Acer barbatum	NSL	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat		Migrate +	Migrate +	3	82
mountain maple	Acer spicatum	NSL	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat			3	83	
cittamwood/gum bumelia	Sideroxylon lanuginosum ssp.	NSL	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat			2	84	
pecan	Carya illinoensis	NSH	Low	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat		Migrate ++	3	85	
black hickory	Carya texana	NDL	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			2	86	
sweetgum	Liquidambar styraciflua	WDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Likely +	Likely +	3	87
bigleaf magnolia	Magnolia macrophylla	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	88	
redbay	Persea borbonia	NSL	Low	0	0	0	Unknown	Unknown	High	Absent	Unknown	Unknown			0	89	
water oak	Quercus nigra	WDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate +	3	90	
Shumard oak	Quercus shumardii	NSL	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat		Migrate +	3	91	
live oak	Quercus virginiana	NDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	92	
bluejack oak	Quercus incana	NSL	Low	0	0	0	Unknown	New Habitat	Medium	Absent	Unknown	New Habitat			3	93	
winged elm	Ulmus alata	WDL	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate +	Migrate ++	3	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
cedar elm	Ulmus crassifolia	NDH	Medium	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat			0	95