

sq. km sq. mi FIA Plots
Area of Region 180,538 69,706 3,162

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	4			High	19	29	Increase	32	37	Very Good	9	11	Likely	2	2
Hickory	8			Medium	39	61	No Change	21	20	Good	21	22	Infill	30	31
Maple	6	Abundant	3	Low	41	14	Decrease	23	19	Fair	13	14	Migrate	3	6
Oak	20	Common	25	FIA	11		New	15	18	Poor	17	16			
Pine	5	Rare	59				Unknown	19	16	Very Poor	16	13			
Other	44	Absent	22							FIA Only	7	7			
	87		109		110	104		110	110	Unknown	8	5			
											91	88			

Potential Changes in Climate Variables

Temperature (°F)

Scenario	2009	2039	2069	2099		
Annual	CCSM45	54.9	56.8	58.8	59.2	
Average	CCSM85	54.9	57.4	59.8	62.8	
	GFDL45	54.9	59.2	60.1	61.1	
	GFDL85	54.9	57.8	60.8	64.8	
	HAD45	54.9	57.5	60.6	62.1	
	HAD85	54.9	57.8	62.6	66.4	
Growing Season	CCSM45	71.8	73.9	75.5	76.3	
	CCSM85	71.8	74.7	77.2	80.9	
May—Sep	GFDL45	71.8	77.1	78.0	79.7	
	GFDL85	71.8	75.4	79.0	84.0	
	HAD45	71.8	74.7	77.3	79.1	
	HAD85	71.8	75.1	80.9	84.4	
Coldest Month	CCSM45	28.1	30.2	31.8	32.2	
	CCSM85	28.1	31.0	32.2	33.9	
Average	GFDL45	28.1	32.4	32.8	33.1	
	GFDL85	28.1	30.8	32.1	33.0	
	HAD45	28.1	29.5	32.1	32.3	
	HAD85	28.1	31.3	33.8	35.8	
Warmest Month	CCSM45	78.1	80.4	81.5	82.0	
	CCSM85	78.1	81.5	82.9	84.6	
Average	GFDL45	78.1	82.0	83.5	84.7	
	GFDL85	78.1	82.2	83.8	87.3	
	HAD45	78.1	81.3	83.1	84.0	
	HAD85	78.1	82.8	86.1	87.8	

Precipitation (in)

Scenario	2009	2039	2069	2099		
Annual	CCSM45	43.2	41.8	45.7	43.8	
Total	CCSM85	43.2	43.5	44.8	45.1	
	GFDL45	43.2	47.7	49.3	49.1	
	GFDL85	43.2	47.6	53.6	53.3	
	HAD45	43.2	43.9	46.1	45.9	
	HAD85	43.2	45.3	42.5	45.7	
Growing Season	CCSM45	21.5	20.3	22.0	20.5	
	CCSM85	21.5	21.1	20.7	20.5	
May—Sep	GFDL45	21.5	23.8	23.1	23.6	
	GFDL85	21.5	23.8	25.7	24.9	
	HAD45	21.5	21.1	21.2	21.1	
	HAD85	21.5	21.5	18.3	18.8	

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
white oak	Quercus alba	WDH	Medium	53.4	783.1	18.9	Sm. dec.	Lg. dec.	High	Abundant	Good	Good			1	1
black oak	Quercus velutina	WDH	High	54.6	620.6	14.4	No change	Sm. dec.	Medium	Abundant	Good	Fair			1	2
post oak	Quercus stellata	WDH	High	45.8	589.6	15.4	Sm. inc.	Sm. inc.	High	Abundant	Very Good	Very Good			1	3
eastern redcedar	Juniperus virginiana	WDH	Medium	46.2	383.1	11.7	Sm. inc.	Sm. inc.	Medium	Common	Good	Good			1	4
American elm	Ulmus americana	WDH	Medium	63.8	218.7	6.8	Sm. inc.	Sm. inc.	Medium	Common	Good	Good			1	5
black walnut	Juglans nigra	WDH	Low	51.5	187.9	7.0	No change	No change	Medium	Common	Fair	Fair			1	6
northern red oak	Quercus rubra	WDH	Medium	37	164.0	6.2	No change	No change	High	Common	Good	Good			1	7
shagbark hickory	Carya ovata	WSL	Medium	41.9	151.5	7.1	Lg. dec.	Lg. dec.	Medium	Common	Poor	Poor			0	8
black hickory	Carya texana	NDL	High	34.7	137.6	4.6	Sm. inc.	Lg. inc.	Medium	Common	Good	Very Good			1	9
shortleaf pine	Pinus echinata	WDH	High	10.7	135.8	12.8	Sm. inc.	Lg. inc.	Medium	Common	Good	Very Good	Infill ++	Infill ++	1	10
hackberry	Celtis occidentalis	WDH	Medium	47.6	127.4	7.0	Sm. inc.	Sm. inc.	High	Common	Very Good	Very Good			1	11
mockernut hickory	Carya alba	WDL	Medium	33.9	122.7	4.4	Sm. inc.	Sm. inc.	High	Common	Very Good	Very Good			1	12
scarlet oak	Quercus coccinea	WDL	Medium	12.1	100.4	8.4	Lg. dec.	Lg. dec.	Medium	Common	Poor	Poor	Infill +	Infill +	0	13
sugar maple	Acer saccharum	WDH	High	18.2	98.7	6.5	No change	No change	High	Common	Good	Good	Infill ++	Infill ++	1	14
honeylocust	Gleditsia triacanthos	NSH	Low	35.9	96.9	7.6	Sm. inc.	Sm. inc.	High	Common	Very Good	Very Good			1	15
chinkapin oak	Quercus muehlenbergii	NSL	Medium	26.3	93.7	4.9	No change	No change	Medium	Common	Fair	Fair			1	16
white ash	Fraxinus americana	WDL	Medium	38.4	92.3	3.9	Sm. inc.	Sm. inc.	Low	Common	Fair	Fair			1	17
blackjack oak	Quercus marilandica	NSL	Medium	17.3	85.9	5.1	Lg. inc.	Lg. inc.	High	Common	Very Good	Very Good	Infill ++	Infill ++	1	18
shingle oak	Quercus imbricaria	NDH	Medium	27.3	85.3	7.5	Lg. dec.	Lg. dec.	Medium	Common	Poor	Poor	Infill +	Infill +	0	19
bitternut hickory	Carya cordiformis	WSL	Low	34.1	79.0	4.7	Sm. inc.	Sm. inc.	High	Common	Very Good	Very Good			1	20
Osage-orange	Maclura pomifera	NDH	Medium	22.3	73.3	10.9	Sm. inc.	Lg. inc.	High	Common	Very Good	Very Good	Infill ++	Infill ++	1	21
slippery elm	Ulmus rubra	WDL	Low	38.7	71.3	3.0	Sm. inc.	Sm. inc.	Medium	Common	Good	Good			1	22
black cherry	Prunus serotina	WSL	Medium	37.7	67.3	3.1	Sm. inc.	Sm. inc.	Low	Common	Fair	Fair			1	23
silver maple	Acer saccharinum	NSH	Low	11.8	61.7	11.3	No change	No change	High	Common	Good	Good	Infill ++	Infill ++	1	24
sycamore	Platanus occidentalis	NSL	Low	15	60.2	5.7	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good			1	25
green ash	Fraxinus pennsylvanica	WSH	Low	24.2	58.9	5.1	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good			1	26
sassafras	Sassafras albidum	WSL	Low	23.5	53.1	2.6	Sm. dec.	Sm. dec.	Medium	Common	Poor	Poor			0	27
pignut hickory	Carya glabra	WDL	Medium	13.8	51.8	4.3	Sm. dec.	No change	Medium	Common	Poor	Fair	Infill +	Infill +	1	28
blackgum	Nyssa sylvatica	WDL	Medium	15	49.2	3.3	Sm. inc.	Lg. inc.	High	Rare	Good	Good	Infill ++	Infill ++	1	29
pin oak	Quercus palustris	NSH	Low	15.1	48.0	10.1	Sm. dec.	Sm. dec.	Low	Rare	Very Poor	Very Poor			2	30
flowering dogwood	Cornus florida	WDL	Medium	26.1	46.7	2.0	No change	No change	Medium	Rare	Poor	Poor			1	31
boxelder	Acer negundo	WSH	Low	15.5	46.5	6.1	No change	Sm. inc.	High	Rare	Fair	Good	Infill +	Infill ++	1	32
red mulberry	Morus rubra	NSL	Low	35.6	43.5	2.5	No change	No change	Medium	Rare	Poor	Poor			1	33
black willow	Salix nigra	NSH	Low	8.8	38.0	11.4	No change	No change	Low	Rare	Very Poor	Very Poor			2	34
common persimmon	Diospyros virginiana	NSL	Low	17.5	35.2	2.6	Lg. inc.	Lg. inc.	High	Rare	Good	Good			1	35
Shumard oak	Quercus shumardii	NSL	Low	8.9	31.3	4.4	No change	No change	High	Rare	Fair	Fair	Infill +	Infill +	1	36
winged elm	Ulmus alata	WDL	Medium	13	30.9	2.5	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good	Infill ++	Infill ++	1	37
red maple	Acer rubrum	WDH	High	12.8	26.9	2.5	Lg. inc.	Lg. inc.	High	Rare	Good	Good	Infill ++	Infill ++	1	38
bur oak	Quercus macrocarpa	NDH	Medium	12.7	26.5	6.7	Sm. dec.	Sm. dec.	High	Rare	Poor	Poor	Infill +	Infill +	2	39
black locust	Robinia pseudoacacia	NDH	Low	6.3	26.2	10.0	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	2	40
eastern redbud	Cercis canadensis	NSL	Low	18.3	21.7	1.8	Sm. inc.	Lg. inc.	Medium	Rare	Fair	Good			0	41
eastern cottonwood	Populus deltoides	NSH	Low	7.6	20.7	9.0	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	2	42
southern red oak	Quercus falcata	WDL	Medium	3.9	20.1	5.5	Sm. inc.	Lg. inc.	High	Rare	Good	Good	Infill ++	Infill ++	2	43
eastern hophornbeam; ironw	Ostrya virginiana	WSL	Low	13.2	17.1	2.1	Sm. inc.	Lg. inc.	High	Rare	Good	Good	Infill ++	Infill ++	1	44
sweetgum	Liquidambar styraciflua	WDH	High	2.4	12.9	8.6	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			2	45
swamp white oak	Quercus bicolor	NSL	Low	7.2	12.5	6.2	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			2	46
American basswood	Tilia americana	WSL	Medium	4.9	12.3	3.8	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			2	47

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river birch	Betula nigra	NSL	Low	4.3	12.2	6.4	Sm. dec.	No change	Medium	Rare	Very Poor	Poor		Infill +	2	48
pecan	Carya illinoensis	NSH	Low	4.2	10.1	5.9	Lg. inc.	Lg. inc.	Low	Rare	Fair	Fair	Infill +	Infill +	2	49
Ohio buckeye	Aesculus glabra	NSL	Low	6.6	6.8	2.7	Sm. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	50
sugarberry	Celtis laevigata	NDH	Medium	1.5	6.1	4.6	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			2	51
blue ash	Fraxinus quadrangulata	NSL	Low	2.2	5.5	3.4	Lg. dec.	Lg. dec.	Low	Rare	Very Poor	Very Poor			0	52
wild plum	Prunus americana	NSLX	FIA	2.1	5.0	2.7	Unknown	Unknown	Medium	Rare	FIA Only	FIA Only			0	53
white mulberry	Morus alba	NSL	FIA	3.2	4.8	3.1	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	54
serviceberry	Amelanchier spp.	NSL	Low	5.9	4.3	0.9	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	55
shellbark hickory	Carya laciniosa	NSL	Low	4.1	4.3	4.3	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			2	56
pawpaw	Asimina triloba	NSL	Low	3.6	3.3	1.4	Lg. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			2	57
yellow-poplar	Liriodendron tulipifera	WDH	High	1	3.1	3.4	No change	Sm. inc.	High	Rare	Fair	Good	Infill +		2	58
American hornbeam; musclev	Carpinus caroliniana	WSL	Low	2.1	3.1	1.4	No change	Sm. inc.	Medium	Rare	Poor	Fair	Infill +	Infill +	2	59
willow oak	Quercus phellos	NSL	Low	0.4	2.8	4.5	No change	Sm. inc.	Medium	Rare	Poor	Fair	Infill +	Infill +	2	60
cherrybark oak; swamp red o.	Quercus pagoda	NSL	Medium	0.7	2.6	5.1	No change	Sm. inc.	Medium	Rare	Poor	Fair	Infill +	Infill +	2	61
cittamwood/gum bumelia	Sideroxylon lanuginosum ssp.	NSL	Low	2.7	2.6	1.0	Lg. inc.	Lg. inc.	High	Rare	Good	Good	Infill ++	Infill ++	2	62
overcup oak	Quercus lyrata	NSL	Medium	0.4	2.5	4.0	No change	No change	Low	Rare	Very Poor	Very Poor			2	63
Kentucky coffeetree	Gymnocladus dioicus	NSLX	FIA	2	2.5	3.4	Unknown	Unknown	Medium	Rare	FIA Only	FIA Only			2	64
eastern white pine	Pinus strobus	WDH	High	0.2	2.4	14.2	Lg. dec.	Lg. dec.	Low	Rare	Very Poor	Very Poor			0	65
northern pin oak	Quercus ellipsoidalis	NSH	Medium	0.1	1.4	7.0	Lg. dec.	Lg. dec.	High	Rare	Poor	Poor			0	66
American beech	Fagus grandifolia	WDH	High	0.7	1.3	7.3	Sm. inc.	Lg. inc.	Medium	Rare	Fair	Good	Infill +		2	67
northern catalpa	Catalpa speciosa	NSHX	FIA	0.2	1.1	6.9	Unknown	Unknown	Medium	Rare	FIA Only	FIA Only			0	68
Virginia pine	Pinus virginiana	NDH	High	0.3	1.1	6.6	Sm. dec.	No change	Medium	Rare	Very Poor	Poor		Infill +	2	69
bald cypress	Taxodium distichum	NSH	Medium	0.1	0.9	1.9	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	2	70
ailanthus	Ailanthus altissima	NSL	FIA	0.6	0.8	2.8	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	71
Siberian elm	Ulmus pumila	NDH	FIA	0.6	0.8	4.0	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	72
butternut	Juglans cinerea	NSLX	FIA	0.4	0.6	1.3	Unknown	Unknown	Low	Rare	FIA Only	FIA Only			0	73
water hickory	Carya aquatica	NSL	Medium	0	0.4	0.7	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	2	74
Scots pine	Pinus sylvestris	NSH	FIA	0.1	0.3	2.8	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	75
florida maple	Acer barbatum	NSL	Low	0	0.2	0.7	No change	No change	High	Rare	Fair	Fair	Infill +	Infill +	2	76
Nuttall oak	Quercus texana	NSH	Medium	0.2	0.2	3.2	Sm. inc.	Sm. inc.	High	Rare	Good	Good			0	77
pumpkin ash	Fraxinus profunda	NSH	FIA	0.2	0.2	2.8	Unknown	Unknown	NA	Rare	FIA Only	FIA Only			0	78
water tupelo	Nyssa aquatica	NSH	Medium	0.3	0.2	7.0	Sm. dec.	No change	Low	Rare	Very Poor	Very Poor			0	79
swamp chestnut oak	Quercus michauxii	NSL	Low	0.3	0.2	3.1	Sm. inc.	Sm. inc.	Medium	Rare	Fair	Fair	Infill +	Infill +	2	80
cucumbertree	Magnolia acuminata	NSL	Low	0.2	0.1	0.5	Sm. dec.	No change	Medium	Rare	Very Poor	Poor		Infill +	2	81
water elm	Planera aquatica	NSL	Low	0	0.1	0.2	Sm. inc.	Sm. inc.	Medium	Rare	Fair	Fair	Infill +	Infill +	2	82
black maple	Acer nigrum	NSH	Low	0.1	0.1	0.9	Lg. dec.	Lg. dec.	High	Rare	Poor	Poor			0	83
water oak	Quercus nigra	WDH	High	0.2	0.0	3.0	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			2	84
peachleaf willow	Salix amygdaloides	NSLX	FIA	0.1	0.0	0.4	Unknown	Unknown	Medium	Rare	FIA Only	FIA Only			0	85
red pine	Pinus resinosa	NSH	Medium	0	0.0	0.1	Lg. dec.	Lg. dec.	Low	Rare	Very Poor	Very Poor			0	86
waterlocust	Gleditsia aquatica	NSLX	FIA	0	0.0	0.0	Unknown	Unknown	Medium	Rare	FIA Only	FIA Only			0	87
ashe juniper	Juniperus ashei	NDH	High	0	0	0	New Habitat	New Habitat	NA	Absent	New Habitat	New Habitat			0	88
slash pine	Pinus elliottii	NDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	89
longleaf pine	Pinus palustris	NSH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	90
loblolly pine	Pinus taeda	WDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Likely +	Likely +	3	91
striped maple	Acer pensylvanicum	NSL	Medium	0	0	0	Unknown	New Habitat	Medium	Absent	Unknown	New Habitat			3	92
mountain maple	Acer spicatum	NSL	Low	0	0	0	Unknown	Unknown	High	Absent	Unknown	Unknown			0	93
yellow birch	Betula alleghaniensis	NDL	High	0	0	0	Unknown	Unknown	Medium	Modeled	Unknown	Unknown			0	94

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Common Name	Scientific Name	Range	MR	%Cell	FIAsum	FIaiv	ChngCl45	ChngCl85	Adap	Abund	Capabil45	Capabil85	SHIFT45	SHIFT85	SSO	N
black ash	Fraxinus nigra	WSH	Medium	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat			3	95
silverbell	Halesia spp.	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	96
American holly	Ilex opaca	NSL	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate +	3	97
southern magnolia	Magnolia grandiflora	NSL	Low	0	0	0	Unknown	New Habitat	Medium	Absent	Unknown	New Habitat			3	98
sweetbay	Magnolia virginiana	NSL	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate +	3	99
bigleaf magnolia	Magnolia macrophylla	NSL	Low	0	0	0	New Habitat	Unknown	Medium	Absent	New Habitat	Unknown			3	100
swamp tupelo	Nyssa biflora	NDH	Medium	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat		Migrate +	3	101
sourwood	Oxydendrum arboreum	NDL	High	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	102
redbay	Persea borbonia	NSL	Low	0	0	0	Unknown	New Habitat	High	Absent	Unknown	New Habitat			3	103
bigtooth aspen	Populus grandidentata	NSL	Medium	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	104
pin cherry	Prunus pensylvanica	NSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	105
laurel oak	Quercus laurifolia	NDH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Likely +	Likely +	3	106
chestnut oak	Quercus prinus	NDH	High	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	107
live oak	Quercus virginiana	NDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	108
bluejack oak	Quercus incana	NSL	Low	0	0	0	Unknown	New Habitat	Medium	Absent	Unknown	New Habitat			3	109
cedar elm	Ulmus crassifolia	NDH	Medium	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat	Migrate ++	Migrate ++	3	110