

Current and Potential Future Habitat, Capability, and Migration

	sq. km	sq. mi	FIA Plots
Area of Region	16,622	6,417.6	333

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	18	21	Increase	29	30	Very Good	8	10
Hickory	4			Medium	36	50	No Change	14	16	Good	20	22
Maple	4	Abundant	3	Low	29	12	Decrease	25	22	Fair	8	6
Oak	17	Common	19	FIA	4		New	6	6	Poor	15	15
Pine	6	Rare	50				Unknown	13	13	Very Poor	14	11
Other	37	Absent	12							FIA Only	2	2
	<b>72</b>		<b>84</b>		<b>87</b>	<b>83</b>		<b>87</b>	<b>87</b>	Unknown	9	9
											<b>19</b>	<b>23</b>
											<b>76</b>	<b>75</b>

Potential Changes in Climate Variables

Temperature (°F)

	Scenario	2009	2039	2069	2099
Annual Average	CCSM45	51.8	53.0	54.4	54.5
	CCSM85	51.8	53.3	54.9	56.9
	GFDL45	51.8	53.6	55.3	55.9
	GFDL85	51.8	53.8	56.0	58.5
	HAD45	51.8	53.2	55.1	56.1
HAD85	51.8	53.4	55.7	58.5	
Growing Season (May—Sep)	CCSM45	61.6	62.8	63.9	64.3
	CCSM85	61.6	62.8	64.6	66.9
	GFDL45	61.6	63.5	65.3	66.2
	GFDL85	61.6	63.8	66.3	69.0
	HAD45	61.6	63.2	65.0	66.1
HAD85	61.6	63.2	66.1	69.0	
Coldest Month (Average)	CCSM45	37.3	38.9	39.5	39.5
	CCSM85	37.3	38.9	39.5	40.5
	GFDL45	37.3	39.6	39.8	40.4
	GFDL85	37.3	38.7	39.4	40.2
	HAD45	37.3	37.7	38.9	39.2
HAD85	37.3	37.9	38.8	39.9	
Warmest Month (Average)	CCSM45	65.2	66.5	67.1	67.1
	CCSM85	65.2	66.6	67.8	68.8
	GFDL45	65.2	67.1	67.8	68.5
	GFDL85	65.2	67.5	68.7	70.3
	HAD45	65.2	67.1	68.1	68.6
HAD85	65.2	67.4	69.1	70.8	

Precipitation (in)

	Scenario	2009	2039	2069	2099
Annual Total	CCSM45	33.1	36.9	38.4	38.6
	CCSM85	33.1	37.1	38.7	43.5
	GFDL45	33.1	35.7	38.4	40.3
	GFDL85	33.1	35.4	38.9	39.6
	HAD45	33.1	35.8	35.7	34.8
HAD85	33.1	37.4	34.4	33.5	
Growing Season (May—Sep)	CCSM45	16.3	19.9	20.7	21.1
	CCSM85	16.3	19.0	20.4	23.2
	GFDL45	16.3	17.8	19.6	20.7
	GFDL85	16.3	17.3	20.3	20.9
	HAD45	16.3	17.8	17.1	16.2
HAD85	16.3	18.8	16.6	14.9	

**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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Common Name	Scientific Name	Range	MR	%Cell	FIAsum	FIAiv	ChngCl45	ChngCl85	Adap	Abund	Capabil45	Capabil85	SHIFT45	SHIFT85	SSO	N
loblolly pine	Pinus taeda	WDH	High	84.6	3781.9	34.6	No change	No change	Medium	Abundant	Good	Good				1 1
sweetgum	Liquidambar styraciflua	WDH	High	87.3	1272.6	12.9	No change	No change	Medium	Abundant	Good	Good				1 2
red maple	Acer rubrum	WDH	High	84.3	902.7	8.3	No change	No change	High	Abundant	Very Good	Very Good				1 3
yellow-poplar	Liriodendron tulipifera	WDH	High	57.2	463.2	7.5	Lg. dec.	Lg. dec.	High	Common	Fair	Fair				1 4
pond pine	Pinus serotina	NSH	Medium	13.9	321.1	16.4	No change	No change	Low	Common	Poor	Poor	Infill +	Infill +		0 5
white oak	Quercus alba	WDH	Medium	45.8	237.6	4.3	No change	No change	High	Common	Good	Good				1 6
swamp tupelo	Nyssa biflora	NDH	Medium	28.5	165.6	4.1	Lg. inc.	Lg. inc.	Low	Common	Good	Good				1 7
water oak	Quercus nigra	WDH	High	45	138.5	2.8	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good				1 8
green ash	Fraxinus pennsylvanica	WDL	Low	19.8	104.8	3.9	Sm. inc.	Lg. inc.	Medium	Common	Good	Very Good				1 9
black cherry	Prunus serotina	WDL	Medium	38.4	100.5	2.4	Sm. inc.	Lg. inc.	Low	Common	Fair	Good				1 10
redbay	Persea borbonia	NSL	Low	28.6	92.7	2.3	No change	No change	High	Common	Good	Good				1 11
American holly	Ilex opaca	NSL	Medium	42	84.1	1.7	Sm. inc.	Sm. inc.	Medium	Common	Good	Good				1 12
willow oak	Quercus phellos	NSL	Low	29	72.8	2.2	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good				1 13
sourwood	Oxydendrum arboreum	NDL	High	27.2	65.9	2.1	Lg. dec.	Lg. dec.	High	Common	Fair	Fair				1 14
southern red oak	Quercus falcata	WDL	Medium	30.3	64.3	1.7	Lg. inc.	Lg. inc.	High	Common	Very Good	Very Good				1 15
bald cypress	Taxodium distichum	NSH	Medium	5.2	63.7	6.7	No change	No change	Medium	Common	Fair	Fair	Infill +	Infill +		1 16
mockernut hickory	Carya alba	WDL	Medium	28.4	59.9	1.9	Lg. inc.	Lg. inc.	High	Common	Very Good	Very Good				1 17
American elm	Ulmus americana	WDH	Medium	23.3	59.5	2.5	Sm. inc.	Lg. inc.	Medium	Common	Good	Very Good				1 18
shortleaf pine	Pinus echinata	WDH	High	12.5	58.9	2.6	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good	Infill ++	Infill ++		1 19
sweetbay	Magnolia virginiana	NSL	Medium	25	57.3	1.8	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good				1 20
blackgum	Nyssa sylvatica	WDL	Medium	36.3	55.6	1.3	Lg. inc.	Lg. inc.	High	Common	Very Good	Very Good				1 21
Virginia pine	Pinus virginiana	NDH	High	8.5	51.9	4.8	Lg. dec.	Lg. dec.	Medium	Common	Poor	Poor				0 22
river birch	Betula nigra	NSL	Low	13.6	47.9	4.0	Sm. inc.	Lg. inc.	Medium	Rare	Fair	Good				1 23
loblolly-bay	Gordonia lasianthus	NSH	Medium	5.3	43.4	7.2	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +		2 24
American hornbeam; muscley	Carpinus caroliniana	WSL	Low	25.3	41.0	1.3	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good				1 25
black willow	Salix nigra	NSH	Low	11.4	40.9	2.6	Sm. inc.	Lg. inc.	Low	Rare	Poor	Fair				1 26
water tupelo	Nyssa aquatica	NSH	Medium	3.5	36.5	11.6	No change	No change	Low	Rare	Very Poor	Very Poor				0 27
northern red oak	Quercus rubra	WDH	Medium	16.5	34.3	1.6	Lg. dec.	Lg. dec.	High	Rare	Poor	Poor	Infill +	Infill +		1 28
longleaf pine	Pinus palustris	NSH	Medium	2.9	33.4	10.5	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good	Infill ++	Infill ++		2 29
pignut hickory	Carya glabra	WDL	Medium	15.4	32.8	1.9	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor				0 30
slippery elm	Ulmus rubra	WSL	Low	6.6	30.3	4.7	Lg. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor				0 31
flowering dogwood	Cornus florida	WDL	Medium	26.7	29.5	1.0	Sm. inc.	Sm. inc.	Medium	Rare	Fair	Fair				1 32
winged elm	Ulmus alata	WDL	Medium	17.3	27.6	1.5	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good				1 33
Atlantic white-cedar	Chamaecyparis thyoides	NSH	Low	1.8	27.2	12.8	Sm. dec.	Sm. dec.	Low	Rare	Very Poor	Very Poor				2 34
American beech	Fagus grandifolia	WDH	High	11.6	27.0	2.6	Sm. inc.	Lg. inc.	Medium	Rare	Fair	Good	Infill +	Infill ++		1 35
eastern redb cedar	Juniperus virginiana	WDH	Medium	12.3	25.8	1.4	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good	Infill ++	Infill ++		1 36
cherrybark oak; swamp red o	Quercus pagoda	NSL	Medium	10.4	24.9	2.9	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good	Infill ++	Infill ++		1 37
swamp chestnut oak	Quercus michauxii	NSL	Low	9	24.1	2.5	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +		1 38
scarlet oak	Quercus coccinea	WDL	Medium	13.6	24.0	1.1	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor				0 39
sycamore	Platanus occidentalis	NSL	Low	5.9	22.1	3.2	Sm. dec.	No change	Medium	Rare	Very Poor	Poor		Infill +		1 40
laurel oak	Quercus laurifolia	NDH	Medium	10.5	19.5	1.4	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good	Infill ++	Infill ++		1 41
post oak	Quercus stellata	WDH	High	11.1	19.3	1.1	Lg. inc.	Lg. inc.	High	Rare	Good	Good	Infill ++	Infill ++		2 42
hackberry	Celtis occidentalis	WDH	Medium	4.2	18.5	4.6	Sm. dec.	Sm. dec.	High	Rare	Poor	Poor				0 43
black oak	Quercus velutina	WDH	High	16.6	15.9	0.9	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good	Infill ++	Infill ++		1 44
slash pine	Pinus elliotii	NDH	High	1.6	15.7	5.0	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good				2 45
pond cypress	Taxodium ascendens	NSH	Medium	1	13.7	10.4	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +		2 46
common persimmon	Diospyros virginiana	NSL	Low	8.3	8.8	0.6	Lg. dec.	Lg. dec.	High	Rare	Poor	Poor				1 47

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Common Name	Scientific Name	Range	MR	%Cell	FIAsum	FIAiv	ChngCl45	ChngCl85	Adap	Abund	Capabil45	Capabil85	SHIFT45	SHIFT85	SSO	N
eastern cottonwood	Populus deltoides	NSH	Low	2.4	7.7	2.3	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor				0 48
white ash	Fraxinus americana	WDL	Medium	4.6	6.9	1.2	No change	No change	Low	Rare	Very Poor	Very Poor				2 49
black walnut	Juglans nigra	WDH	Low	5.2	5.3	1.1	Very Lg. dec.	Very Lg. dec.	Medium	Rare	Lost	Lost				0 50
Carolina ash	Fraxinus caroliniana	NSL	FIA	1	5.1	2.0	Unknown	Unknown	NA	Rare	FIA Only	FIA Only				0 51
sassafras	Sassafras albidum	WSL	Low	6	4.9	0.5	Sm. dec.	No change	Medium	Rare	Very Poor	Poor		Infill +		1 52
shagbark hickory	Carya ovata	WSL	Medium	3.8	4.7	1.2	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor				2 53
florida maple	Acer barbatum	NSL	Low	2.7	3.7	0.5	Sm. dec.	Sm. dec.	High	Rare	Poor	Poor		Infill +		2 54
eastern redbud	Cercis canadensis	NSL	Low	3	3.7	0.9	Lg. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor				0 55
chestnut oak	Quercus prinus	NDH	High	1.4	3.5	1.1	Lg. dec.	Very Lg. dec.	High	Rare	Poor	Lost				0 56
overcup oak	Quercus lyrata	NSL	Medium	1.7	3.4	1.1	Lg. inc.	Lg. inc.	Low	Rare	Fair	Fair	Infill +	Infill +		2 57
eastern hophornbeam; ironw	Ostrya virginiana	WSL	Low	2.5	3.3	1.8	Sm. inc.	Lg. inc.	High	Rare	Good	Good	Infill ++	Infill ++		2 58
boxelder	Acer negundo	WSH	Low	4.1	2.4	0.8	Lg. dec.	Sm. dec.	High	Rare	Poor	Poor		Infill +		2 59
paulownia	Paulownia tomentosa	NSL	FIA	1.6	2.0	1.7	Unknown	Unknown	NA	Rare	NNIS	NNIS				0 60
live oak	Quercus virginiana	NDH	High	0.6	2.0	2.6	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good				2 61
Shumard oak	Quercus shumardii	NSL	Low	0.6	1.9	2.5	Sm. dec.	Sm. dec.	High	Rare	Poor	Poor				0 62
southern magnolia	Magnolia grandiflora	NSL	Low	0.8	1.7	2.8	No change	Lg. inc.	Medium	Rare	Poor	Good	Infill +			2 63
red mulberry	Morus rubra	NSL	Low	3.2	1.3	0.5	Lg. dec.	No change	Medium	Rare	Very Poor	Poor		Infill +		2 64
ailanthus	Ailanthus altissima	NSL	FIA	1.6	1.2	1.0	Unknown	Unknown	NA	Rare	NNIS	NNIS				0 65
blackjack oak	Quercus marilandica	NSL	Medium	1	1.1	0.7	Lg. inc.	Lg. inc.	High	Rare	Good	Good				2 66
bitternut hickory	Carya cordiformis	WSL	Low	1.6	0.6	0.5	Very Lg. dec.	Very Lg. dec.	High	Rare	Lost	Lost				0 67
sugar maple	Acer saccharum	WDH	High	0.1	0.5	0.1	Very Lg. dec.	Very Lg. dec.	High	Rare	Lost	Lost				0 68
chinkapin oak	Quercus muehlenbergii	NSL	Medium	0.8	0.3	0.4	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor				0 69
bigleaf magnolia	Magnolia macrophylla	NSL	Low	0.6	0.2	0.3	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor				0 70
serviceberry	Amelanchier spp.	NSL	Low	0.5	0.1	0.1	No change	No change	Medium	Rare	Poor	Poor				0 71
pumpkin ash	Fraxinus profunda	NSH	FIA	0.4	0.1	0.1	Unknown	Unknown	NA	Rare	FIA Only	FIA Only				0 72
sand pine	Pinus clausa	NDH	High	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat				3 73
pitch pine	Pinus rigida	NSH	High	0	0	0	Unknown	Unknown	Medium	Modeled	Unknown	Unknown				0 74
striped maple	Acer pensylvanicum	NSL	Medium	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown				0 75
yellow buckeye	Aesculus flava	NSL	Low	0	0	0	Unknown	Unknown	Low	Absent	Unknown	Unknown				0 76
pawpaw	Asimina triloba	NSL	Low	0	0	0	Unknown	Unknown	Medium	Modeled	Unknown	Unknown				0 77
water hickory	Carya aquatica	NSL	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Likely +	Likely +		3 78
black hickory	Carya texana	NDL	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat				0 79
sugarberry	Celtis laevigata	NDH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Likely +	Likely +		3 80
black ash	Fraxinus nigra	WSH	Medium	0	0	0	Unknown	Unknown	Low	Absent	Unknown	Unknown				0 81
cucumbertree	Magnolia acuminata	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown				0 82
pin cherry	Prunus pensylvanica	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown				0 83
turkey oak	Quercus laevis	NSH	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat				3 84
black locust	Robinia pseudoacacia	NDH	Low	0	0	0	Unknown	Unknown	Medium	Modeled	Unknown	Unknown				0 85
American basswood	Tilia americana	WSL	Medium	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown				0 86
cedar elm	Ulmus crassifolia	NDH	Medium	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat				0 87