

Current and Potential Future Habitat, Capability, and Migration

	sq. km	sq. mi	FIA Plots
Area of Region	39,890	15,402	1,230

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	2			High	25	27	Increase	28	36	Very Good	12	15	Likely	2	2
Hickory	8			Medium	37	61	No Change	40	35	Good	16	17	Infill	34	37
Maple	6	Abundant	4	Low	41	18	Decrease	21	18	Fair	16	16	Migrate	2	2
Oak	19	Common	28	FIA	7		New	10	10	Poor	27	26			
Pine	9	Rare	64				Unknown	11	11	Very Poor	18	15			
Other	52	Absent	14							FIA Only	4	4			
	96		110		110	106		110	110	Unknown	4	4			
											97	97			

Potential Changes in Climate Variables

Temperature (°F)

Scenario	2009	2039	2069	2099		
Annual	CCSM45	55.7	57.1	58.8	58.9	
Average	CCSM85	55.7	57.4	59.4	61.7	
	GFDL45	55.7	57.9	59.7	60.4	
	GFDL85	55.7	58.0	60.7	63.7	
	HAD45	55.7	57.5	59.9	61.1	
	HAD85	55.7	57.7	61.0	64.4	
Growing Season	CCSM45	67.1	68.6	70.0	70.4	
	CCSM85	67.1	68.7	70.8	73.8	
May—Sep	GFDL45	67.1	69.6	71.5	72.6	
	GFDL85	67.1	69.8	72.8	76.2	
	HAD45	67.1	69.6	71.8	73.2	
	HAD85	67.1	69.6	74.1	77.5	
Coldest Month	CCSM45	38.8	40.8	41.4	41.4	
	CCSM85	38.8	40.8	41.7	42.6	
Average	GFDL45	38.8	41.4	41.6	42.1	
	GFDL85	38.8	40.4	41.3	41.9	
	HAD45	38.8	39.0	40.5	40.8	
	HAD85	38.8	39.7	40.6	41.9	
Warmest Month	CCSM45	71.2	72.9	73.7	73.7	
	CCSM85	71.2	73.1	74.3	75.8	
Average	GFDL45	71.2	73.6	74.4	75.2	
	GFDL85	71.2	74.0	75.5	77.5	
	HAD45	71.2	74.1	75.5	76.1	
	HAD85	71.2	74.6	77.4	79.3	

Precipitation (in)

Scenario	2009	2039	2069	2099		
Annual	CCSM45	38.8	42.0	44.0	45.2	
Total	CCSM85	38.8	42.4	44.9	49.6	
	GFDL45	38.8	43.4	46.6	48.9	
	GFDL85	38.8	42.6	47.9	47.8	
	HAD45	38.8	39.4	41.7	42.3	
	HAD85	38.8	42.8	39.3	41.1	
Growing Season	CCSM45	17.0	19.5	20.8	21.5	
	CCSM85	17.0	19.0	20.0	22.2	
May—Sep	GFDL45	17.0	20.6	22.7	23.4	
	GFDL85	17.0	19.6	23.7	23.8	
	HAD45	17.0	17.0	17.4	17.9	
	HAD85	17.0	19.2	16.0	15.8	

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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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	69.2	2591.6	32.4	No change	No change	Medium	Abundant	Good	Good			1	1
sweetgum	Liquidambar styraciflua	WDH	High	75.4	897.1	10.5	Sm. inc.	Sm. inc.	Medium	Abundant	Very Good	Very Good			1	2
yellow-poplar	Liriodendron tulipifera	WDH	High	66.3	668.2	8.8	Sm. dec.	Lg. dec.	High	Abundant	Good	Good			1	3
red maple	Acer rubrum	WDH	High	82.5	616.3	6.1	No change	No change	High	Abundant	Very Good	Very Good			1	4
white oak	Quercus alba	WDH	Medium	66.1	458.4	6.4	No change	No change	High	Common	Good	Good			1	5
Virginia pine	Pinus virginiana	NDH	High	37.1	444.4	11.2	Lg. dec.	Lg. dec.	Medium	Common	Poor	Poor			0	6
water oak	Quercus nigra	WDH	High	56.4	370.1	5.6	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good			1	7
shortleaf pine	Pinus echinata	WDH	High	50.3	290.6	5.3	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good			1	8
chestnut oak	Quercus prinus	NDH	High	19	261.2	9.9	Sm. dec.	Sm. dec.	High	Common	Fair	Fair	Infill +	Infill +	1	9
black cherry	Prunus serotina	WDL	Medium	62.3	230.7	3.2	Sm. inc.	Sm. inc.	Low	Common	Fair	Fair			1	10
eastern redcedar	Juniperus virginiana	WDH	Medium	49.5	225.0	4.4	Sm. inc.	Lg. inc.	Medium	Common	Good	Very Good			1	11
sourwood	Oxydendrum arboreum	NDL	High	46.8	221.2	4.0	Sm. dec.	Sm. dec.	High	Common	Fair	Fair			1	12
scarlet oak	Quercus coccinea	WDL	Medium	34.1	190.3	4.5	Sm. dec.	Sm. dec.	Medium	Common	Poor	Poor			0	13
southern red oak	Quercus falcata	WDL	Medium	50.2	161.1	3.1	Lg. inc.	Lg. inc.	High	Common	Very Good	Very Good			1	14
longleaf pine	Pinus palustris	NSH	Medium	9.1	145.5	9.8	No change	No change	Medium	Common	Fair	Fair	Infill +	Infill +	1	15
northern red oak	Quercus rubra	WDH	Medium	38.6	145.0	3.2	No change	Sm. inc.	High	Common	Good	Very Good			1	16
eastern white pine	Pinus strobus	WDH	High	12.6	140.0	8.3	Sm. dec.	Sm. dec.	Low	Common	Poor	Poor	Infill +	Infill +	0	17
winged elm	Ulmus alata	WDL	Medium	39.7	135.1	3.0	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good			1	18
mockernut hickory	Carya alba	WDL	Medium	48.2	128.7	2.5	Lg. inc.	Lg. inc.	High	Common	Very Good	Very Good			1	19
blackgum	Nyssa sylvatica	WDL	Medium	54	126.7	1.9	Lg. inc.	Lg. inc.	High	Common	Very Good	Very Good			1	20
flowering dogwood	Cornus florida	WDL	Medium	57.3	108.9	1.7	No change	No change	Medium	Common	Fair	Fair			1	21
post oak	Quercus stellata	WDH	High	38.7	102.8	2.6	Lg. inc.	Lg. inc.	High	Common	Very Good	Very Good			1	22
willow oak	Quercus phellos	NSL	Low	28	101.3	3.2	No change	Sm. inc.	Medium	Common	Fair	Good			1	23
pignut hickory	Carya glabra	WDL	Medium	37.7	93.2	2.3	Sm. inc.	Sm. inc.	Medium	Common	Good	Good			1	24
green ash	Fraxinus pennsylvanica	WSH	Low	26.8	87.0	2.9	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good			1	25
black oak	Quercus velutina	WDH	High	33.8	80.9	2.2	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good			1	26
American hornbeam; muscle	Carpinus caroliniana	WSL	Low	25.5	66.3	2.4	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good			1	27
river birch	Betula nigra	NSL	Low	9.8	66.1	6.4	No change	No change	Medium	Common	Fair	Fair			1	28
American beech	Fagus grandifolia	WDH	High	25.1	60.9	2.2	Sm. inc.	Lg. inc.	Medium	Common	Good	Very Good	Infill ++	Infill ++	1	29
white ash	Fraxinus americana	WDL	Medium	19.1	59.3	3.0	Sm. inc.	Sm. inc.	Low	Common	Fair	Fair			1	30
American holly	Ilex opaca	NSL	Medium	30.2	55.0	1.7	Sm. inc.	Sm. inc.	Medium	Common	Good	Good			1	31
swamp tupelo	Nyssa biflora	NDH	Medium	7.4	54.2	4.9	No change	No change	Low	Common	Poor	Poor	Infill +	Infill +	2	32
sycamore	Platanus occidentalis	NSL	Low	11	48.5	3.7	No change	Sm. inc.	Medium	Rare	Poor	Fair	Infill +	Infill +	1	33
eastern hemlock	Tsuga canadensis	NSH	High	7.8	46.4	3.2	No change	No change	Low	Rare	Very Poor	Very Poor			2	34
common persimmon	Diospyros virginiana	NSL	Low	23	45.9	1.6	Lg. dec.	Sm. dec.	High	Rare	Poor	Poor			1	35
American elm	Ulmus americana	WDH	Medium	21.5	45.7	2.2	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			1	36
black locust	Robinia pseudoacacia	NDH	Low	10.7	42.4	2.6	Sm. dec.	No change	Medium	Rare	Very Poor	Poor		Infill +	1	37
sugarberry	Celtis laevigata	NDH	Medium	11.6	41.9	3.5	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good	Infill ++	Infill ++	1	38
turkey oak	Quercus laevis	NSH	Medium	5	41.6	6.1	No change	No change	High	Rare	Fair	Fair	Infill +	Infill +	2	39
laurel oak	Quercus laurifolia	NDH	Medium	9.4	35.6	2.7	Sm. inc.	Sm. inc.	Medium	Rare	Fair	Fair	Infill +	Infill +	1	40
black willow	Salix nigra	NSH	Low	8.3	31.3	3.6	No change	Sm. inc.	Low	Rare	Very Poor	Poor		Infill +	1	41
slash pine	Pinus elliotii	NSH	High	5.5	30.2	7.0	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good	Infill ++	Infill ++	2	42
sweet birch	Betula lenta	NDH	High	6.6	30.1	2.2	No change	No change	Low	Rare	Very Poor	Very Poor			2	43
shagbark hickory	Carya ovata	WSL	Medium	12.8	28.6	2.5	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	44
pitch pine	Pinus rigida	NSH	High	7.2	27.4	3.1	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	1	45
water tupelo	Nyssa aquatica	NSH	Medium	3.3	27.3	8.1	No change	No change	Low	Rare	Very Poor	Very Poor			2	46
black walnut	Juglans nigra	WDH	Low	9.9	24.5	2.0	Lg. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	47

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ailanthus	Ailanthus altissima	NSL	FIA	4.5	21.3	4.3	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	48
bald cypress	Taxodium distichum	NSH	Medium	2.9	20.7	6.6	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	2	49
boxelder	Acer negundo	WSH	Low	8.3	20.5	3.2	Sm. dec.	No change	High	Rare	Poor	Fair	Infill +	Infill +	1	50
cherrybark oak; swamp red o	Quercus pagoda	NSL	Medium	7.6	18.0	1.9	No change	Sm. inc.	Medium	Rare	Poor	Fair	Infill +	Infill +	1	51
mountain or Fraser magnolia	Magnolia fraseri	NSL	Low	4.8	17.1	1.6	No change	No change	Low	Rare	Very Poor	Very Poor			0	52
blackjack oak	Quercus marilandica	NSL	Medium	7.1	16.9	2.2	Lg. inc.	Lg. inc.	High	Rare	Good	Good	Infill ++	Infill ++	1	53
sassafras	Sassafras albidum	WSL	Low	12.1	16.6	1.1	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			1	54
slippery elm	Ulmus rubra	WSL	Low	10.3	16.4	1.4	Lg. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	55
pecan	Carya illinoensis	NSH	Low	2	16.1	8.0	No change	Sm. inc.	Low	Rare	Very Poor	Poor		Infill +	2	56
red mulberry	Morus rubra	NSL	Low	7.8	15.4	1.7	No change	No change	Medium	Rare	Poor	Poor			1	57
pond cypress	Taxodium ascendens	NSH	Medium	0.8	13.9	8.8	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	2	58
eastern redbud	Cercis canadensis	NSL	Low	9.2	11.5	1.1	Sm. dec.	No change	Medium	Rare	Very Poor	Poor			1	59
pond pine	Pinus serotina	NSH	Medium	1.9	10.3	1.6	No change	No change	Low	Rare	Very Poor	Very Poor			2	60
florida maple	Acer barbatum	NSL	Low	7.3	9.9	1.4	No change	Sm. inc.	High	Rare	Fair	Good	Infill +	Infill ++	1	61
bitternut hickory	Carya cordiformis	WSL	Low	6.1	9.1	1.4	Sm. dec.	Sm. dec.	High	Rare	Poor	Poor	Infill +	Infill +	2	62
cucumbertree	Magnolia acuminata	NSL	Low	3.4	8.8	1.6	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	2	63
eastern cottonwood	Populus deltoides	NSH	Low	2.6	8.7	3.8	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	64
eastern hophornbeam; ironw	Ostrya virginiana	WSL	Low	5.1	8.2	1.3	Lg. inc.	Lg. inc.	High	Rare	Good	Good	Infill ++	Infill ++	1	65
sand hickory	Carya pallida	NSL	FIA	5.4	8.2	1.6	Unknown	Unknown	NA	Rare	FIA Only	FIA Only			0	66
hackberry	Celtis occidentalis	WDH	Medium	2.5	8.0	2.7	Sm. dec.	Sm. dec.	High	Rare	Poor	Poor	Infill +	Infill +	2	67
yellow birch	Betula alleghaniensis	NDL	High	1.2	8.0	1.4	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	2	68
redbay	Persea borbonia	NSL	Low	3.3	7.0	0.8	No change	No change	High	Rare	Fair	Fair	Infill +	Infill +	2	69
overcup oak	Quercus lyrata	NSL	Medium	1.8	6.9	3.0	No change	No change	Low	Rare	Very Poor	Very Poor			2	70
Table Mountain pine	Pinus pungens	NSL	Low	1	5.5	2.9	Sm. dec.	Sm. dec.	High	Rare	Poor	Poor		Infill +	2	71
water hickory	Carya aquatica	NSL	Medium	3	5.0	1.9	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	2	72
sugar maple	Acer saccharum	WDH	High	1.6	5.0	1.6	No change	No change	High	Rare	Fair	Fair	Infill +	Infill +	2	73
swamp chestnut oak	Quercus michauxii	NSL	Low	2.2	4.4	1.8	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	2	74
sweetbay	Magnolia virginiana	NSL	Medium	3.7	4.3	1.0	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good	Infill ++	Infill ++	2	75
serviceberry	Amelanchier spp.	NSL	Low	2.9	4.2	0.9	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	2	76
live oak	Quercus virginiana	NDH	High	1.1	4.1	2.2	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			2	77
honeylocust	Gleditsia triacanthos	NSH	Low	1.8	4.0	2.3	No change	Sm. inc.	High	Rare	Fair	Good		Infill ++	2	78
paulownia	Paulownia tomentosa	NSL	FIA	0.9	3.9	3.2	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	79
water elm	Planera aquatica	NSL	Low	1.4	3.8	2.4	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	2	80
silverbell	Halesia spp.	NSL	Low	3.1	3.7	1.0	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	2	81
pawpaw	Asimina triloba	NSL	Low	3.3	2.7	1.0	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	82
American basswood	Tilia americana	WSL	Medium	1.3	2.6	0.8	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	2	83
bluejack oak	Quercus incana	NSL	Low	1.1	2.4	0.8	Sm. inc.	Lg. inc.	Medium	Rare	Fair	Good	Infill +		2	84
striped maple	Acer pensylvanicum	NSL	Medium	1.2	2.2	0.5	No change	Sm. dec.	Medium	Rare	Poor	Very Poor	Infill +		2	85
red spruce	Picea rubens	NDH	High	0.2	1.5	1.6	No change	No change	Low	Rare	Very Poor	Very Poor			2	86
yellow buckeye	Aesculus flava	NSL	Low	1	1.3	0.4	No change	No change	Low	Rare	Very Poor	Very Poor			2	87
butternut	Juglans cinerea	NSLX	FIA	0.3	1.3	5.2	Unknown	Unknown	Low	Rare	FIA Only	FIA Only			0	88
American chestnut	Castanea dentata	NSLX	FIA	1	1.0	0.5	Unknown	Unknown	Medium	Rare	FIA Only	FIA Only			0	89
shellbark hickory	Carya laciniosa	NSL	Low	0.5	0.9	1.8	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	90
chinkapin oak	Quercus muehlenbergii	NSL	Medium	0.3	0.7	2.8	No change	No change	Medium	Rare	Poor	Poor			0	91
white mulberry	Morus alba	NSL	FIA	1	0.6	0.6	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	92
wild plum	Prunus americana	NSLX	FIA	0.8	0.5	0.6	Unknown	Unknown	Medium	Rare	FIA Only	FIA Only			0	93
Shumard oak	Quercus shumardii	NSL	Low	0.5	0.5	0.9	Sm. dec.	No change	High	Rare	Poor	Fair			0	94

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loblolly-bay	Gordonia lasianthus	NSH	Medium	0.2	0.3	0.7	Sm. inc.	Sm. inc.	Medium	Rare	Fair	Fair	Infill +	Infill +	2	95
mountain maple	Acer spicatum	NSL	Low	0	0.2	0.1	Lg. dec.	Lg. dec.	High	Rare	Poor	Poor			0	96
ashe juniper	Juniperus ashei	NDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			0	97
sand pine	Pinus clausa	NDH	High	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat	Migrate ++	Migrate +	3	98
spruce pine	Pinus glabra	NSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Likely +	Likely +	3	99
northern white-cedar	Thuja occidentalis	WSH	High	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	100
black maple	Acer nigrum	NSH	Low	0	0	0	Unknown	Unknown	High	Absent	Unknown	Unknown			0	101
silver maple	Acer saccharinum	NSH	Low	0	0	0	Unknown	Unknown	High	Absent	Unknown	Unknown			0	102
cittamwood/gum bumelia	Sideroxylon lanuginosum ssp.	NSL	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat			3	103
black hickory	Carya texana	NDL	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	104
black ash	Fraxinus nigra	WSH	Medium	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat			3	105
southern magnolia	Magnolia grandiflora	NSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate ++	Migrate ++	3	106
bigleaf magnolia	Magnolia macrophylla	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	107
pin cherry	Prunus pensylvanica	NSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Likely +	Likely +	3	108
cabbage palmetto	Sabal palmetto	NDH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			0	109
cedar elm	Ulmus crassifolia	NDH	Medium	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat			0	110