

Current and Potential Future Habitat, Capability, and Migration

	sq. km	sq. mi	FIA Plots
Area of Region	34,837	13,451	662

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	15	24	Increase	39	41	Very Good	12	13	Likely	0	0
Hickory	8			Medium	34	54	No Change	16	18	Good	23	26	Infill	21	22
Maple	4	Abundant	2	Low	37	9	Decrease	20	16	Fair	16	15	Migrate	2	2
Oak	17	Common	33	FIA	3		New	9	9	Poor	9	8			
Pine	3	Rare	43				Unknown	5	5	Very Poor	15	13			
Other	44	Absent	9							FIA Only	1	1			
										Unknown	2	2			
	78		87		89	87		89	89		78	78		23	24

Potential Changes in Climate Variables

Temperature (°F)

	Scenario	2009	2039	2069	2099	
Annual Average	CCSM45	56.6	58.0	59.6	59.9	
	CCSM85	56.6	58.3	60.4	62.6	
	GFDL45	56.6	59.3	60.4	61.1	
	GFDL85	56.6	58.8	61.3	64.2	
	HAD45	56.6	58.7	61.1	62.1	
HAD85	56.6	58.9	62.6	65.6		
Growing Season May—Sep	CCSM45	68.4	69.6	70.9	71.4	
	CCSM85	68.4	70.1	72.1	74.8	
	GFDL45	68.4	71.5	72.6	74.0	
	GFDL85	68.4	71.0	73.8	77.3	
	HAD45	68.4	71.2	73.5	74.4	
HAD85	68.4	71.4	76.6	79.3		
Coldest Month Average	CCSM45	38.8	40.6	41.6	41.7	
	CCSM85	38.8	41.1	42.1	43.2	
	GFDL45	38.8	41.9	41.9	42.0	
	GFDL85	38.8	40.1	41.0	41.4	
	HAD45	38.8	39.3	40.9	41.4	
HAD85	38.8	40.3	41.6	42.9		
Warmest Month Average	CCSM45	72.3	73.4	74.0	74.2	
	CCSM85	72.3	74.0	74.8	76.2	
	GFDL45	72.3	75.8	76.1	77.0	
	GFDL85	72.3	75.1	76.5	78.5	
	HAD45	72.3	76.1	77.8	78.0	
HAD85	72.3	76.7	80.1	80.9		

Precipitation (in)

	Scenario	2009	2039	2069	2099	
Annual Total	CCSM45	45.6	47.5	51.9	50.0	
	CCSM85	45.6	48.1	49.6	52.7	
	GFDL45	45.6	50.9	55.0	54.9	
	GFDL85	45.6	50.8	53.5	56.0	
	HAD45	45.6	43.5	47.9	49.7	
HAD85	45.6	46.9	41.8	46.1		
Growing Season May—Sep	CCSM45	16.9	16.6	16.9	17.1	
	CCSM85	16.9	15.8	15.4	16.2	
	GFDL45	16.9	19.1	20.8	20.5	
	GFDL85	16.9	20.2	21.4	22.0	
	HAD45	16.9	15.0	16.2	15.3	
HAD85	16.9	16.6	12.6	12.9		

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	44.2	1217.0	23.2	Sm. inc.	Sm. inc.	Medium	Abundant	Very Good	Very Good			1	1
sweetgum	Liquidambar styraciflua	WDH	High	73.4	869.8	12.7	No change	No change	Medium	Abundant	Good	Good			1	2
southern red oak	Quercus falcata	WDL	Medium	40.7	329.3	6.9	Sm. inc.	Sm. inc.	High	Common	Very Good	Very Good			1	3
winged elm	Ulmus alata	WDL	Medium	59.5	261.3	4.4	Sm. inc.	Sm. inc.	Medium	Common	Good	Good			1	4
shortleaf pine	Pinus echinata	WDH	High	27.3	235.3	6.9	Sm. inc.	Sm. inc.	Medium	Common	Good	Good	Infill ++	Infill ++	1	5
sugarberry	Celtis laevigata	NDH	Medium	35.8	227.0	8.9	Sm. inc.	Sm. inc.	Medium	Common	Good	Good			1	6
white oak	Quercus alba	WDH	Medium	33.7	226.5	5.6	No change	No change	High	Common	Good	Good			1	7
green ash	Fraxinus pennsylvanica	WSH	Low	54.7	215.5	5.5	Sm. inc.	Sm. inc.	Medium	Common	Good	Good			1	8
eastern redcedar	Juniperus virginiana	WDH	Medium	36.5	194.4	4.6	No change	Sm. inc.	Medium	Common	Fair	Good			1	9
post oak	Quercus stellata	WDH	High	34.1	187.3	5.2	Lg. inc.	Lg. inc.	High	Common	Very Good	Very Good	Infill ++	Infill ++	1	10
water oak	Quercus nigra	WDH	High	44.3	182.7	4.7	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good			1	11
cherrybark oak; swamp red o	Quercus pagoda	NSL	Medium	37.3	170.6	4.7	Sm. inc.	Sm. inc.	Medium	Common	Good	Good			1	12
black willow	Salix nigra	NSH	Low	27.2	157.7	6.2	Sm. inc.	Sm. inc.	Low	Common	Fair	Fair			1	13
red maple	Acer rubrum	WDH	High	44.2	140.8	3.1	Sm. inc.	Sm. inc.	High	Common	Very Good	Very Good			1	14
American elm	Ulmus americana	WDH	Medium	48.4	140.0	3.8	Sm. inc.	Sm. inc.	Medium	Common	Good	Good			1	15
sycamore	Platanus occidentalis	NSL	Low	23.7	127.5	4.3	No change	No change	Medium	Common	Fair	Fair			1	16
boxelder	Acer negundo	WSH	Low	23	124.8	4.4	No change	No change	High	Common	Good	Good			1	17
yellow-poplar	Liriodendron tulipifera	WDH	High	24.6	122.1	3.5	Sm. dec.	Sm. dec.	High	Common	Fair	Fair			1	18
pignut hickory	Carya glabra	WDL	Medium	30.9	117.4	3.2	Sm. dec.	Sm. dec.	Medium	Common	Poor	Poor			0	19
Nuttall oak	Quercus texana	NSH	Medium	23.7	116.9	13.2	Sm. dec.	Sm. dec.	High	Common	Fair	Fair			0	20
black cherry	Prunus serotina	WDL	Medium	36.7	101.0	2.4	No change	No change	Low	Common	Poor	Poor			0	21
mockernut hickory	Carya alba	WDL	Medium	29.7	98.8	2.7	Sm. inc.	Lg. inc.	High	Common	Very Good	Very Good			1	22
willow oak	Quercus phellos	NSL	Low	30.2	88.1	7.2	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good			1	23
pecan	Carya illinoensis	NSH	Low	14.3	70.5	7.0	Sm. inc.	Lg. inc.	Low	Common	Fair	Good	Infill +	Infill ++	1	24
overcup oak	Quercus lyrata	NSL	Medium	26.9	70.0	7.6	Sm. inc.	Lg. inc.	Low	Common	Fair	Good	Infill +	Infill ++	1	25
eastern hophornbeam; ironw	Ostrya virginiana	WSL	Low	21.9	69.5	2.7	Sm. inc.	Sm. inc.	High	Common	Very Good	Very Good			1	26
slippery elm	Ulmus rubra	WSL	Low	38.7	64.1	2.4	Sm. inc.	Lg. inc.	Medium	Common	Good	Very Good			1	27
black oak	Quercus velutina	WDH	High	19	63.3	3.1	No change	No change	Medium	Common	Fair	Fair	Infill +	Infill +	1	28
sassafras	Sassafras albidum	WSL	Low	19	62.5	3.5	Sm. dec.	No change	Medium	Common	Poor	Fair			1	29
common persimmon	Diospyros virginiana	NSL	Low	45.1	61.8	2.0	Sm. inc.	Sm. inc.	High	Common	Very Good	Very Good			1	30
blackgum	Nyssa sylvatica	WDL	Medium	29.9	59.6	1.8	Lg. inc.	Lg. inc.	High	Common	Very Good	Very Good			1	31
flowering dogwood	Cornus florida	WDL	Medium	29	57.3	1.8	Sm. inc.	Sm. inc.	Medium	Common	Good	Good			1	32
bald cypress	Taxodium distichum	NSH	Medium	14.7	54.6	8.3	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good	Infill ++	Infill ++	1	33
eastern cottonwood	Populus deltoides	NSH	Low	12.6	51.3	4.7	No change	No change	Medium	Common	Fair	Fair	Infill +	Infill +	1	34
American hornbeam; musclev	Carpinus caroliniana	WSL	Low	15.2	51.1	2.8	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good			1	35
water hickory	Carya aquatica	NSL	Medium	27	44.5	8.7	Sm. inc.	Lg. inc.	Medium	Rare	Fair	Good	Infill +	Infill ++	1	36
American beech	Fagus grandifolia	WDH	High	10.5	41.0	2.7	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good	Infill ++	Infill ++	2	37
river birch	Betula nigra	NSL	Low	5.4	37.5	5.5	Sm. dec.	No change	Medium	Rare	Very Poor	Poor		Infill +	1	38
black locust	Robinia pseudoacacia	NDH	Low	5.6	37.4	4.9	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	39
Shumard oak	Quercus shumardii	NSL	Low	10.2	30.8	3.1	Sm. inc.	Sm. inc.	High	Rare	Good	Good	Infill ++	Infill ++	1	40
shagbark hickory	Carya ovata	WSL	Medium	11.5	27.3	2.4	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	41
scarlet oak	Quercus coccinea	WDL	Medium	5.6	23.8	2.7	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	42
white ash	Fraxinus americana	WDL	Medium	16.3	23.1	1.3	Lg. inc.	Lg. inc.	Low	Rare	Fair	Fair	Infill +	Infill +	1	43
water elm	Planera aquatica	NSL	Low	9.3	21.7	5.7	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	1	44
swamp tupelo	Nyssa biflora	NDH	Medium	0.8	19.0	13.3	No change	No change	Low	Rare	Very Poor	Very Poor			2	45
honeylocust	Gleditsia triacanthos	NSH	Low	13.9	17.2	1.7	Lg. inc.	Lg. inc.	High	Rare	Good	Good	Infill ++	Infill ++	1	46
bitternut hickory	Carya cordiformis	WSL	Low	6.4	17.1	2.0	No change	No change	High	Rare	Fair	Fair	Infill +	Infill +	2	47

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Common Name	Scientific Name	Range	MR	%Cell	FIAsum	FIAiv	ChngCl45	ChngCl85	Adap	Abund	Capabil45	Capabil85	SHIFT45	SHIFT85	SSO	N
florida maple	Acer barbatum	NSL	Low	6.4	16.7	2.1	Sm. dec.	No change	High	Rare	Poor	Fair	Infill +	Infill +	2	48
red mulberry	Morus rubra	NSL	Low	15.6	15.8	1.1	Sm. dec.	No change	Medium	Rare	Very Poor	Poor			1	49
northern red oak	Quercus rubra	WDH	Medium	7.6	15.2	1.4	Lg. dec.	Lg. dec.	High	Rare	Poor	Poor	Infill +		2	50
blackjack oak	Quercus marilandica	NSL	Medium	8.1	13.6	1.5	Lg. inc.	Lg. inc.	High	Rare	Good	Good	Infill ++	Infill ++	1	51
water tupelo	Nyssa aquatica	NSH	Medium	4.9	12.5	12.2	No change	No change	Low	Rare	Very Poor	Very Poor			2	52
cedar elm	Ulmus crassifolia	NDH	Medium	6.9	10.5	4.0	Lg. inc.	Lg. inc.	Low	Rare	Fair	Fair	Infill +	Infill +	2	53
swamp chestnut oak	Quercus michauxii	NSL	Low	8.6	10.5	1.7	Sm. inc.	Sm. inc.	Medium	Rare	Fair	Fair	Infill +	Infill +	2	54
eastern redbud	Cercis canadensis	NSL	Low	10.5	10.2	0.8	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	55
silver maple	Acer saccharinum	NSH	Low	4	9.8	2.8	Sm. dec.	Sm. dec.	High	Rare	Poor	Poor			0	56
chinkapin oak	Quercus muehlenbergii	NSL	Medium	2.9	9.5	2.2	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			2	57
Osage-orange	Maclura pomifera	NDH	Medium	2.4	9.1	2.7	No change	No change	High	Rare	Fair	Fair	Infill +	Infill +	2	58
bigleaf magnolia	Magnolia macrophylla	NSL	Low	0.8	6.0	6.3	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	59
black walnut	Juglans nigra	WDH	Low	2.9	5.8	1.1	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	60
shellbark hickory	Carya laciniosa	NSL	Low	0.9	5.3	6.1	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	61
black hickory	Carya texana	NDL	High	2.2	4.8	1.6	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			2	62
cucumbertree	Magnolia acuminata	NSL	Low	1	4.5	2.3	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			2	63
laurel oak	Quercus laurifolia	NDH	Medium	1.4	3.8	2.6	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			2	64
pawpaw	Asimina triloba	NSL	Low	2.2	3.5	0.5	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	65
paulownia	Paulownia tomentosa	NSL	FIA	1.2	3.1	1.6	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	66
cittamwood/gum bumelia	Sideroxylon lanuginosum ssp.	NSL	Low	0.8	3.0	3.4	Lg. inc.	Lg. inc.	High	Rare	Good	Good			2	67
sourwood	Oxydendrum arboreum	NDL	High	1.8	1.7	1.3	Sm. inc.	Sm. inc.	High	Rare	Good	Good			2	68
hackberry	Celtis occidentalis	WDH	Medium	1.8	1.7	9.2	No change	No change	High	Rare	Fair	Fair	Infill +	Infill +	2	69
waterlocust	Gleditsia aquatica	NSLX	FIA	3.8	1.2	1.4	Unknown	Unknown	Medium	Rare	FIA Only	FIA Only			0	70
slash pine	Pinus elliotii	NDH	High	0.4	0.9	1.5	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			2	71
American holly	Ilex opaca	NSL	Medium	0.9	0.7	0.4	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			2	72
southern magnolia	Magnolia grandiflora	NSL	Low	0.3	0.4	0.3	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			2	73
ailanthus	Ailanthus altissima	NSL	FIA	0.3	0.3	1.2	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	74
American basswood	Tilia americana	WSL	Medium	0.9	0.1	1.5	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	75
serviceberry	Amelanchier spp.	NSL	Low	0.4	0.1	0.2	No change	No change	Medium	Rare	Poor	Poor			0	76
bluejack oak	Quercus incana	NSL	Low	0.3	0.1	0.3	No change	Sm. inc.	Medium	Rare	Poor	Fair		Infill +	2	77
sweetbay	Magnolia virginiana	NSL	Medium	0.3	0.1	0.3	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			2	78
ashe juniper	Juniperus ashei	NDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			0	79
spruce pine	Pinus glabra	NSL	Low	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 +	Migrate +	3	81
striped maple	Acer pensylvanicum	NSL	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	82
black ash	Fraxinus nigra	WSH	Medium	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat			3	83
silverbell	Halesia spp.	NSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	84
redbay	Persea borbonia	NSL	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat			3	85
pin cherry	Prunus pensylvanica	NSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	86
swamp white oak	Quercus bicolor	NSL	Low	0	0	0	Unknown	Unknown	Medium	Modeled	Unknown	Unknown			0	87
chestnut oak	Quercus prinus	NDH	High	0	0	0	Unknown	Unknown	High	Modeled	Unknown	Unknown			0	88
live oak	Quercus virginiana	NDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate ++	Migrate ++	3	89