

U.S. Census Bureau Urban Areas
Climate Change Atlas Tree Species
 Current and Potential Future Habitat, Capability, and Migration

sq. km sq. mi FIA Plots
 Area of Region 8,579.1 3,312.4 103

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														
Hickory	1														
Maple	1	Abundant	4	High	9	10	Increase	10	12	Very Good	5	5	Likely	3	4
Oak	5	Common	10	Medium	23	33	No Change	12	10	Good	2	6	Infill	13	11
Pine	4	Rare	17	Low	17	7	Decrease	6	6	Fair	9	6	Migrate	2	4
Other	18	Absent	18	FIA	3		New	8	10	Poor	9	8			
	31		49		52	50	Unknown	16	14	Very Poor	2	2			
								52	52	FIA Only	3	3			
										Unknown	13	11			
											43	41			

Potential Changes in Climate Variables

Temperature (°F)

Scenario	2009	2039	2069	2099		
Annual	CCSM45	72.5	73.9	75.3	75.3	
Average	CCSM85	72.5	73.9	76.0	78.2	
	GFDL45	72.5	76.2	76.6	77.4	
	GFDL85	72.5	74.7	77.6	80.9	
	HAD45	72.5	74.0	76.2	77.4	
	HAD85	72.5	74.7	77.0	80.4	
Growing Season	CCSM45	80.7	81.9	83.1	83.2	
	CCSM85	80.7	81.9	84.0	86.3	
May—Sep	GFDL45	80.7	84.5	84.7	85.8	
	GFDL85	80.7	83.0	85.8	89.3	
	HAD45	80.7	82.9	84.6	85.8	
	HAD85	80.7	83.2	86.2	89.3	
Coldest Month	CCSM45	59.0	61.1	61.9	61.8	
Average	CCSM85	59.0	60.5	61.5	62.9	
	GFDL45	59.0	61.6	62.0	62.6	
	GFDL85	59.0	61.3	62.5	63.5	
	HAD45	59.0	58.8	60.0	60.6	
	HAD85	59.0	59.7	60.4	62.3	
Warmest Month	CCSM45	82.5	83.8	84.5	84.6	
Average	CCSM85	82.5	83.9	85.1	86.4	
	GFDL45	82.5	84.8	85.7	86.4	
	GFDL85	82.5	84.9	86.5	88.4	
	HAD45	82.5	84.8	85.5	86.1	
	HAD85	82.5	84.8	86.5	87.9	

Precipitation (in)

Scenario	2009	2039	2069	2099		
Annual	CCSM45	50.5	54.0	55.0	57.0	
Total	CCSM85	50.5	52.8	54.2	52.3	
	GFDL45	50.5	58.4	60.2	62.0	
	GFDL85	50.5	54.9	63.5	58.4	
	HAD45	50.5	52.4	53.6	55.2	
	HAD85	50.5	49.7	51.4	50.7	
Growing Season	CCSM45	32.2	34.9	34.4	35.8	
	CCSM85	32.2	33.5	35.0	32.2	
May—Sep	GFDL45	32.2	36.8	37.3	37.3	
	GFDL85	32.2	35.5	39.4	35.5	
	HAD45	32.2	33.4	34.6	32.2	
	HAD85	32.2	31.2	29.3	28.6	

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
laurel oak	Quercus laurifolia	NDH	Medium	70.1	644.1	16.0	Sm. dec.	Sm. dec.	Medium	Abundant	Fair	Fair			0	1
slash pine	Pinus elliotii	NDH	High	49	627.6	25.5	Sm. inc.	Sm. inc.	Medium	Abundant	Very Good	Very Good				1 2
pond cypress	Taxodium ascendens	NSH	Medium	22.3	608.7	32.2	Sm. inc.	Sm. inc.	Medium	Abundant	Very Good	Very Good	Infill ++	Infill ++		1 3
live oak	Quercus virginiana	NDH	High	61.6	568.3	17.3	Sm. inc.	Sm. inc.	Medium	Abundant	Very Good	Very Good				1 4
water oak	Quercus nigra	WDH	High	32.6	334.5	14.5	No change	No change	Medium	Common	Fair	Fair				1 5
longleaf pine	Pinus palustris	NSH	Medium	30.6	316.8	20.2	No change	No change	Medium	Common	Fair	Fair				1 6
red maple	Acer rubrum	WDH	High	45.5	259.7	13.2	Sm. inc.	Sm. inc.	High	Common	Very Good	Very Good				1 7
cabbage palmetto	Sabal palmetto	NDH	Medium	24.7	196.0	13.6	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good				0 8
swamp tupelo	Nyssa biflora	NDH	Medium	33.9	166.4	8.3	Sm. inc.	Sm. inc.	Low	Common	Fair	Fair				1 9
sweetgum	Liquidambar styraciflua	WDH	High	22.5	127.5	6.2	No change	No change	Medium	Common	Fair	Fair	Infill +	Infill +		1 10
bald cypress	Taxodium distichum	NSH	Medium	18.3	99.9	13.3	Sm. inc.	Sm. inc.	Medium	Common	Good	Good	Infill ++	Infill ++		1 11
sand pine	Pinus clausa	NDH	High	3.5	85.4	21.8	No change	No change	Low	Common	Poor	Poor	Infill +	Infill +		2 12
black cherry	Prunus serotina	WDL	Medium	18.6	77.1	7.4	No change	No change	Low	Common	Poor	Poor	Infill +	Infill +		0 13
sweetbay	Magnolia virginiana	NSL	Medium	17.8	72.7	5.3	Sm. inc.	Sm. inc.	Medium	Common	Good	Good				1 14
turkey oak	Quercus laevis	NSH	Medium	6.3	43.8	14.7	No change	No change	High	Rare	Fair	Fair	Infill +	Infill +		2 15
pignut hickory	Carya glabra	WDL	Medium	5.8	31.9	4.9	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor				2 16
southern magnolia	Magnolia grandiflora	NSL	Low	3.5	26.7	6.8	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +		2 17
redbay	Persea borbonia	NSL	Low	22.4	23.6	2.1	No change	Sm. inc.	High	Rare	Fair	Good				1 18
American elm	Ulmus americana	WDH	Medium	15.3	20.2	5.9	Sm. inc.	Lg. inc.	Medium	Rare	Fair	Good	Infill +	Infill ++		1 19
American hornbeam; musclee	Carpinus caroliniana	WSL	Low	4.7	19.0	3.7	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +		1 20
bluejack oak	Quercus incana	NSL	Low	6.3	15.3	4.2	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +		2 21
loblolly-bay	Gordonia lasianthus	NSH	Medium	2.3	13.8	5.3	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +		2 22
loblolly pine	Pinus taeda	WDH	High	2.3	12.0	4.6	Sm. inc.	Lg. inc.	Medium	Rare	Fair	Good	Infill +			2 23
pumpkin ash	Fraxinus profunda	NSH	FIA	10.8	11.6	3.4	Unknown	Unknown	NA	Rare	FIA Only	FIA Only				0 24
eastern hophornbeam; ironw	Ostrya virginiana	WSL	Low	3.5	8.3	2.1	Sm. dec.	Sm. dec.	High	Rare	Poor	Poor				0 25
sugarberry	Celtis laevigata	NDH	Medium	3.5	7.5	1.9	No change	Lg. inc.	Medium	Rare	Poor	Good	Infill +			2 26
common persimmon	Diospyros virginiana	NSL	Low	2.3	3.7	1.4	Sm. dec.	Sm. dec.	High	Rare	Poor	Poor				1 27
Carolina ash	Fraxinus caroliniana	NSL	FIA	5.8	3.3	3.0	Unknown	Unknown	NA	Rare	FIA Only	FIA Only				0 28
waterlocust	Gleditsia aquatica	NSLX	FIA	5.8	2.7	2.7	Unknown	Unknown	Medium	Rare	FIA Only	FIA Only				0 29
water tupelo	Nyssa aquatica	NSH	Medium	1.2	1.4	1.1	Very Lg. dec.	Very Lg. dec.	Low	Rare	Lost	Lost				0 30
black willow	Salix nigra	NSH	Low	4.7	1.2	3.5	Sm. dec.	Sm. dec.	Low	Rare	Very Poor	Very Poor				0 31
shortleaf pine	Pinus echinata	WDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +	Migrate +		3 32
spruce pine	Pinus glabra	NSL	Low	0	0	0	Unknown	Unknown	Medium	Modeled	Unknown	Unknown				0 33
pond pine	Pinus serotina	NSH	Medium	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat	Likely +	Likely +		3 34
striped maple	Acer pensylvanicum	NSL	Medium	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown				0 35
serviceberry	Amelanchier spp.	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown				0 36
shagbark hickory	Carya ovata	WSL	Medium	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown				0 37
mockernut hickory	Carya alba	WDL	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat		Migrate +		3 38
eastern redbud	Cercis canadensis	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown				0 39
flowering dogwood	Cornus florida	WDL	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat				3 40
green ash	Fraxinus pennsylvanica	WSH	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Likely +	Likely +		3 41
silverbell	Halesia spp.	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown				0 42
cucumbertree	Magnolia acuminata	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown				0 43
blackgum	Nyssa sylvatica	WDL	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Migrate ++	Migrate ++		3 44
southern red oak	Quercus falcata	WDL	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat		Migrate +		3 45
willow oak	Quercus phellos	NSL	Low	0	0	0	Unknown	Unknown	Medium	Modeled	Unknown	Unknown				0 46
Shumard oak	Quercus shumardii	NSL	Low	0	0	0	Unknown	Unknown	High	Modeled	Unknown	Unknown				0 47

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Common Name	Scientific Name	Range	MR	%Cell	FIAsum	FIaiv	ChngCl45	ChngCl85	Adap	Abund	Capabil45	Capabil85	SHIFT45	SHIFT85	SSO	N
post oak	Quercus stellata	WDH	High	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Likely +	Likely +	3	48
black locust	Robinia pseudoacacia	NDH	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	49
American mountain-ash	Sorbus americana	NSL	Low	0	0	0	Unknown	New Habitat	Low	Absent	Unknown	New Habitat			0	50
American basswood	Tilia americana	WSL	Medium	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	51
winged elm	Ulmus alata	WDL	Medium	0	0	0	Unknown	New Habitat	Medium	Absent	Unknown	New Habitat		Likely +	3	52