

**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	8,447.3	3,261.5	46

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	1	Abundant 0	High	7	9	Increase	6	10	Very Good	1	1	Likely	7	7
Hickory	3		Common 9	Medium	23	31	No Change	16	13	Good	4	7	Infill	15
Maple	2	Rare 21	Low	20	10	Decrease	8	7	Fair	6	8	Migrate	3	2
Oak	5		Common 9	FIA	0		New	11	12	Poor	11		8	25
Pine	1	Absent 19				Unknown	9	8	Very Poor	6	5			
Other	18		Common 9						FIA Only	0	0			
	30	49		50	50		50	50	Unknown	9	8			
										37	37			

Potential Changes in Climate Variables

Temperature (°F)

	Scenario	2009	2039	2069	2099
Annual Average	CCSM45	69.1	70.5	72.1	72.3
	CCSM85	69.1	70.7	73.0	75.1
	GFDL45	69.1	73.7	73.2	74.0
	GFDL85	69.1	71.4	74.4	77.6
	HAD45	69.1	71.1	73.5	74.5
	HAD85	69.1	71.3	74.3	77.6
Growing Season—Sep	CCSM45	80.3	81.5	82.6	83.0
	CCSM85	80.3	81.6	83.8	86.1
	GFDL45	80.3	85.5	84.4	85.8
	GFDL85	80.3	82.8	85.8	89.5
	HAD45	80.3	82.7	84.8	85.6
	HAD85	80.3	82.8	86.5	89.4
Coldest Month—Average	CCSM45	51.6	53.8	54.7	54.5
	CCSM85	51.6	54.1	55.4	56.4
	GFDL45	51.6	54.8	55.0	55.1
	GFDL85	51.6	53.1	54.2	55.0
	HAD45	51.6	51.9	53.4	54.2
	HAD85	51.6	53.3	54.5	56.2
Warmest Month—Average	CCSM45	83.2	84.1	84.4	84.7
	CCSM85	83.2	84.2	85.1	86.5
	GFDL45	83.2	85.9	86.2	87.2
	GFDL85	83.2	85.6	87.0	89.0
	HAD45	83.2	85.9	87.1	87.3
	HAD85	83.2	86.0	88.1	89.2

Precipitation (in)

	Scenario	2009	2039	2069	2099
Annual Total	CCSM45	62.8	65.1	70.9	68.8
	CCSM85	62.8	65.6	67.3	68.6
	GFDL45	62.8	69.0	73.4	68.9
	GFDL85	62.8	66.7	68.2	66.6
	HAD45	62.8	59.0	62.1	65.8
	HAD85	62.8	67.0	59.7	62.6
Growing Season—May—Sep	CCSM45	30.2	31.6	32.8	32.5
	CCSM85	30.2	30.6	32.0	30.7
	GFDL45	30.2	34.7	38.2	33.9
	GFDL85	30.2	33.8	35.9	36.4
	HAD45	30.2	29.3	29.7	31.6
	HAD85	30.2	30.8	25.6	26.1

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
bald cypress	Taxodium distichum	NSH	Medium	46.2	473.7	21.3	No change	No change	Medium	Common	Fair	Fair	Infill +	Infill +	1	1
water tupelo	Nyssa aquatica	NSH	Medium	30.8	393.2	25.9	Sm. dec.	Sm. dec.	Low	Common	Poor	Poor	Infill +	Infill +	0	2
red maple	Acer rubrum	WDH	High	52.1	333.5	21.2	Sm. inc.	No change	High	Common	Very Good	Good	Infill ++	Infill ++	1	3
green ash	Fraxinus pennsylvanica	WSH	Low	36.7	218.9	12.1	Sm. dec.	Sm. dec.	Medium	Common	Poor	Poor	Infill +	Infill +	0	4
black willow	Salix nigra	NSH	Low	17.5	188.5	16.7	No change	No change	Low	Common	Poor	Poor	Infill +	Infill +	0	5
sugarberry	Celtis laevigata	NDH	Medium	18.9	138.1	11.6	No change	Sm. inc.	Medium	Common	Fair	Good	Infill +	Infill ++	2	6
water oak	Quercus nigra	WDH	High	22.5	93.5	9.0	No change	No change	Medium	Common	Fair	Fair	Infill +	Infill +	2	7
American elm	Ulmus americana	WDH	Medium	32.9	84.5	7.8	No change	No change	Medium	Common	Fair	Fair	Infill +	Infill +	1	8
live oak	Quercus virginiana	NDH	High	17.5	66.4	13.6	Sm. inc.	Lg. inc.	Medium	Common	Good	Very Good			2	9
sweetgum	Liquidambar styraciflua	WDH	High	23.7	48.3	7.5	Sm. inc.	Sm. inc.	Medium	Rare	Fair	Fair	Infill +	Infill +	2	10
boxelder	Acer negundo	WSH	Low	20.1	20.4	4.9	Lg. inc.	Sm. inc.	High	Rare	Good	Good	Infill ++	Infill ++	2	11
willow oak	Quercus phellos	NSL	Low	9.5	14.8	14.4	No change	Sm. inc.	Medium	Rare	Poor	Fair		Infill +	2	12
laurel oak	Quercus laurifolia	NDH	Medium	11.8	14.6	5.9	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	2	13
Nuttall oak	Quercus texana	NSH	Medium	2.4	13.8	3.3	No change	No change	High	Rare	Fair	Fair			0	14
eastern cottonwood	Populus deltoides	NSH	Low	1.2	12.7	6.2	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	2	15
sycamore	Platanus occidentalis	NSL	Low	5.9	10.9	3.0	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	2	16
winged elm	Ulmus alata	WDL	Medium	5.9	7.8	2.3	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	17
pecan	Carya illinoensis	NSH	Low	5.9	6.9	4.4	No change	Lg. inc.	Low	Rare	Very Poor	Fair		Infill +	2	18
blackgum	Nyssa sylvatica	WDL	Medium	10.7	4.5	1.4	Lg. inc.	Lg. inc.	High	Rare	Good	Good	Infill ++	Infill ++	2	19
loblolly pine	Pinus taeda	WDH	High	4.7	4.3	8.3	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			2	20
swamp tupelo	Nyssa biflora	NDH	Medium	5.9	4.1	1.5	No change	No change	Low	Rare	Very Poor	Very Poor			2	21
pond cypress	Taxodium ascendens	NSH	Medium	4.7	2.7	5.3	No change	Lg. inc.	Medium	Rare	Poor	Good	Infill +		2	22
mockernut hickory	Carya alba	WDL	Medium	1.2	1.7	0.8	Very Lg. dec.	Very Lg. dec.	High	Rare	Lost	Lost			0	23
honeylocust	Gleditsia triacanthos	NSH	Low	1.2	1.7	0.8	Very Lg. dec.	No change	High	Rare	Lost	Fair		Infill +	2	24
eastern hophornbeam; ironw	Ostrya virginiana	WSL	Low	9.5	1.2	1.1	Sm. dec.	Sm. dec.	High	Rare	Poor	Poor			0	25
red mulberry	Morus rubra	NSL	Low	1.2	0.8	0.4	No change	No change	Medium	Rare	Poor	Poor			0	26
slippery elm	Ulmus rubra	WSL	Low	1.2	0.8	0.4	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	27
black cherry	Prunus serotina	WDL	Medium	1.2	0.8	0.4	No change	No change	Low	Rare	Very Poor	Very Poor			2	28
water hickory	Carya aquatica	NSL	Medium	4.7	0.6	1.2	No change	Lg. inc.	Medium	Rare	Poor	Good			2	29
sassafras	Sassafras albidum	WSL	Low	4.7	0.1	0.2	Sm. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	30
Atlantic white-cedar	Chamaecyparis thyoides	NSH	Low	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat	Migrate +		3	31
shortleaf pine	Pinus echinata	WDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Likely +	Likely +	3	32
slash pine	Pinus elliotii	NDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Likely +	Likely +	3	33
longleaf pine	Pinus palustris	NSH	Medium	0	0	0	New Habitat	New Habitat	Medium	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	New Habitat	Medium	Absent	Unknown	New Habitat			3	36
pawpaw	Asimina triloba	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	37
cittamwood/gum bumelia	Sideroxylon lanuginosum ssp.	NSL	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	38
flowering dogwood	Cornus florida	WDL	Medium	0	0	0	Unknown	Unknown	Medium	Modeled	Unknown	Unknown			0	39
black ash	Fraxinus nigra	WSH	Medium	0	0	0	Unknown	Unknown	Low	Absent	Unknown	Unknown			0	40
silverbell	Halesia spp.	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	41
sweetbay	Magnolia virginiana	NSL	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Likely +	Likely +	3	42
bigleaf magnolia	Magnolia macrophylla	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	43
pin cherry	Prunus pensylvanica	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	44
southern red oak	Quercus falcata	WDL	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Likely +	Likely +	3	45
cherrybark oak; swamp red o	Quercus pagoda	NSL	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Likely +	Likely +	3	46
overcup oak	Quercus lyrata	NSL	Medium	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat	Likely +	Likely +	3	47

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Common Name	Scientific Name	Range	MR	%Cell	FIAsum	FIaiv	ChngCl45	ChngCl85	Adap	Abund	Capabil45	Capabil85	SHIFT45	SHIFT85	SSO	N	
cabbage palmetto	Sabal palmetto	NDH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat				0	48
American mountain-ash	Sorbus americana	NSL	Low	0	0	0	Unknown	Unknown	Low	Absent	Unknown	Unknown				0	49
cedar elm	Ulmus crassifolia	NDH	Medium	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat	Migrate +	Migrate ++		3	50