

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

Area of Region sq. km sq. mi FIA Plots
 8,182.6 3,159.3 70

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	8	15	Increase	19	19	Very Good	3	2
Hickory	5			Medium	28	42	No Change	11	13	Good	11	14
Maple	3	Abundant	0	Low	28	9	Decrease	16	14	Fair	9	9
Oak	9	Common	15	FIA	2		New	11	12	Poor	14	12
Pine	1	Rare	33				Unknown	9	8	Very Poor	9	9
Other	28	Absent	18							FIA Only	2	2
	48		66		66	66		66	66	Unknown	7	6
											55	54

Potential Changes in Climate Variables

Temperature (°F)

Scenario	2009	2039	2069	2099	
Annual	68.0	69.4	71.1	71.2	
Average	68.0	69.7	71.9	74.0	
GFDL45	68.0	72.2	72.0	73.0	
GFDL85	68.0	70.4	73.3	76.5	
HAD45	68.0	70.1	72.6	73.7	
HAD85	68.0	70.3	73.6	77.0	
Growing Season	79.6	80.8	81.9	82.3	
May—Sep	79.6	81.0	83.1	85.4	
GFDL45	79.6	84.5	83.8	85.5	
GFDL85	79.6	82.3	85.4	89.2	
HAD45	79.6	82.2	84.5	85.1	
HAD85	79.6	82.3	86.3	89.2	
Coldest Month	50.0	52.1	53.1	53.0	
Average	50.0	52.6	53.8	54.9	
GFDL45	50.0	53.1	53.3	53.3	
GFDL85	50.0	51.2	52.1	52.8	
HAD45	50.0	50.8	52.4	53.2	
HAD85	50.0	52.0	53.3	55.1	
Warmest Month	82.6	83.6	84.0	84.2	
Average	82.6	83.9	84.7	86.0	
GFDL45	82.6	85.8	85.9	87.2	
GFDL85	82.6	85.6	87.0	89.2	
HAD45	82.6	85.6	86.8	86.9	
HAD85	82.6	85.8	88.2	89.1	

Precipitation (in)

Scenario	2009	2039	2069	2099	
Annual	61.8	63.8	69.6	67.0	
Total	61.8	63.7	66.1	66.6	
GFDL45	61.8	67.0	74.7	66.8	
GFDL85	61.8	65.4	66.7	66.3	
HAD45	61.8	60.2	61.9	66.2	
HAD85	61.8	66.0	59.6	63.6	
Growing Season	28.3	29.4	31.2	30.4	
May—Sep	28.3	28.1	29.0	28.3	
GFDL45	28.3	32.1	37.7	31.6	
GFDL85	28.3	31.4	33.2	34.4	
HAD45	28.3	28.3	28.2	30.0	
HAD85	28.3	28.3	25.0	25.6	

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
bald cypress	Taxodium distichum	NSH	Medium	41.5	456.4	16.7	No change	No change	Medium	Common	Fair	Fair	Infill +	Infill +	1	1
green ash	Fraxinus pennsylvanica	WSH	Low	51.2	448.5	14.9	Sm. dec.	Sm. dec.	Medium	Common	Poor	Poor	Infill +	Infill +	0	2
red maple	Acer rubrum	WDH	High	34.2	298.9	13.0	Sm. inc.	No change	High	Common	Very Good	Good	Infill ++	Infill ++	1	3
sweetgum	Liquidambar styraciflua	WDH	High	48.8	223.1	15.0	No change	No change	Medium	Common	Fair	Fair	Infill +	Infill +	1	4
sugarberry	Celtis laevigata	NDH	Medium	47.5	211.3	9.7	Sm. inc.	Sm. inc.	Medium	Common	Good	Good	Infill ++	Infill ++	1	5
black willow	Salix nigra	NSH	Low	31.7	184.2	11.9	No change	Sm. inc.	Low	Common	Poor	Fair	Infill +	Infill +	1	6
American elm	Ulmus americana	WDH	Medium	46.3	171.7	6.5	No change	No change	Medium	Common	Fair	Fair	Infill +	Infill +	1	7
water hickory	Carya aquatica	NSL	Medium	29.3	147.7	7.6	Lg. dec.	Sm. dec.	Medium	Common	Poor	Poor	Infill +	Infill +	0	8
water oak	Quercus nigra	WDH	High	35.3	134.5	16.6	Sm. inc.	Sm. inc.	Medium	Common	Good	Good	Infill ++	Infill ++	1	9
water tupelo	Nyssa aquatica	NSH	Medium	24.4	79.5	7.4	Sm. inc.	Sm. inc.	Low	Common	Fair	Fair	Infill +	Infill +	1	10
boxelder	Acer negundo	WSH	Low	13.4	69.5	5.5	Sm. inc.	Sm. inc.	High	Common	Very Good	Very Good	Infill ++	Infill ++	1	11
Nuttall oak	Quercus texana	NSH	Medium	12.2	61.7	5.6	Sm. inc.	Lg. inc.	High	Common	Very Good	Very Good			0	12
overcup oak	Quercus lyrata	NSL	Medium	18.3	61.6	6.6	Sm. inc.	Lg. inc.	Low	Common	Fair	Good	Infill +	Infill ++	1	13
sycamore	Platanus occidentalis	NSL	Low	6.1	59.9	7.5	No change	No change	Medium	Common	Fair	Fair	Infill +	Infill +	2	14
swamp tupelo	Nyssa biflora	NDH	Medium	7.4	58.1	15.3	Sm. dec.	Sm. dec.	Low	Common	Poor	Poor	Infill +	Infill +	2	15
loblolly pine	Pinus taeda	WDH	High	6.1	48.3	17.7	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			2	16
live oak	Quercus virginiana	NDH	High	16.9	38.5	8.3	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good	Infill ++	Infill ++	2	17
eastern redcedar	Juniperus virginiana	WDH	Medium	1.2	29.7	18.7	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	18
water elm	Planera aquatica	NSL	Low	6.1	22.6	2.9	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	2	19
eastern cottonwood	Populus deltoides	NSH	Low	6	22.1	4.9	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	2	20
bitternut hickory	Carya cordiformis	WSL	Low	2.4	18.4	5.8	Sm. dec.	Sm. dec.	High	Rare	Poor	Poor	Infill +	Infill +	2	21
winged elm	Ulmus alata	WDL	Medium	24.4	18.0	3.1	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good	Infill ++	Infill ++	1	22
common persimmon	Diospyros virginiana	NSL	Low	7.3	15.6	1.6	Sm. dec.	No change	High	Rare	Poor	Fair	Infill +	Infill +	2	23
slippery elm	Ulmus rubra	WSL	Low	20.7	13.7	3.0	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good	Infill ++	Infill ++	1	24
cherrybark oak; swamp red o.	Quercus pagoda	NSL	Medium	19.6	11.7	7.4	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good	Infill ++	Infill ++	2	25
white ash	Fraxinus americana	WDL	Medium	1.2	11.4	7.2	Sm. dec.	Sm. dec.	Low	Rare	Very Poor	Very Poor			0	26
wild plum	Prunus americana	NSLX	FIA	1.2	10.7	6.8	Unknown	Unknown	Medium	Rare	FIA Only	FIA Only			0	27
pecan	Carya illinoensis	NSH	Low	18.3	10.4	1.5	Lg. inc.	Lg. inc.	Low	Rare	Fair	Fair		Infill +	2	28
American hornbeam; musclev	Carpinus caroliniana	WSL	Low	9.8	9.5	12.0	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	2	29
honeylocust	Gleditsia triacanthos	NSH	Low	12.2	9.0	2.1	Sm. dec.	Lg. inc.	High	Rare	Poor	Good	Infill +	Infill ++	2	30
redbay	Persea borbonia	NSL	Low	7.4	8.8	3.0	Sm. dec.	Sm. dec.	High	Rare	Poor	Poor			0	31
waterlocust	Gleditsia aquatica	NSLX	FIA	3.7	7.5	1.6	Unknown	Unknown	Medium	Rare	FIA Only	FIA Only			0	32
cedar elm	Ulmus crassifolia	NDH	Medium	1.2	5.2	3.3	Lg. inc.	Lg. inc.	Low	Rare	Fair	Fair	Infill +	Infill +	2	33
swamp chestnut oak	Quercus michauxii	NSL	Low	11	3.2	1.3	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good	Infill ++	Infill ++	2	34
shagbark hickory	Carya ovata	WSL	Medium	2.4	2.9	0.9	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	35
laurel oak	Quercus laurifolia	NDH	Medium	5	2.7	1.3	Sm. inc.	No change	Medium	Rare	Fair	Poor	Infill +	Infill +	2	36
flowering dogwood	Cornus florida	WDL	Medium	6	2.5	0.6	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			2	37
post oak	Quercus stellata	WDH	High	4.8	2.3	0.8	Lg. inc.	Lg. inc.	High	Rare	Good	Good			2	38
black cherry	Prunus serotina	WDL	Medium	8.5	1.3	1.4	No change	No change	Low	Rare	Very Poor	Very Poor			2	39
red mulberry	Morus rubra	NSL	Low	4.9	1.1	2.7	No change	No change	Medium	Rare	Poor	Poor			0	40
shellbark hickory	Carya laciniosa	NSL	Low	4.9	0.8	2.0	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	41
silver maple	Acer saccharinum	NSH	Low	1.2	0.7	0.4	Lg. dec.	Lg. dec.	High	Rare	Poor	Poor			0	42
sweetbay	Magnolia virginiana	NSL	Medium	3.6	0.5	0.9	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	43
American basswood	Tilia americana	WSL	Medium	4.9	0.4	0.9	Sm. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	44
American holly	Ilex opaca	NSL	Medium	4.9	0.2	0.5	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			2	45
blackgum	Nyssa sylvatica	WDL	Medium	4.9	0.2	0.5	Lg. inc.	Lg. inc.	High	Rare	Good	Good	Infill ++	Infill ++	2	46
pin cherry	Prunus pensylvanica	NSL	Low	4.9	0.2	0.5	No change	No change	Medium	Rare	Poor	Poor			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
black oak	Quercus velutina	WDH	High	4.9	0.2	0.4	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	48
Atlantic white-cedar	Chamaecyparis thyoides	NSH	Low	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat	Migrate +		3	49
longleaf pine	Pinus palustris	NSH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	50
striped maple	Acer pensylvanicum	NSL	Medium	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	51
mountain maple	Acer spicatum	NSL	Low	0	0	0	Unknown	Unknown	High	Absent	Unknown	Unknown			0	52
serviceberry	Amelanchier spp.	NSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	53
pawpaw	Asimina triloba	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	54
cittamwood/gum bumelia	Sideroxylon lanuginosum ssp.	NSL	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat		Migrate +	3	55
mockernut hickory	Carya alba	WDL	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Likely +	Likely +	3	56
American beech	Fagus grandifolia	WDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	57
loblolly-bay	Gordonia lasianthus	NSH	Medium	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	58
silverbell	Halesia spp.	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	59
southern magnolia	Magnolia grandiflora	NSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate ++	Migrate ++	3	60
bigleaf magnolia	Magnolia macrophylla	NSL	Low	0	0	0	Unknown	New Habitat	Medium	Absent	Unknown	New Habitat			3	61
southern red oak	Quercus falcata	WDL	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Likely +	Likely +	3	62
chinkapin oak	Quercus muehlenbergii	NSL	Medium	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	63
willow oak	Quercus phellos	NSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Likely +	Likely +	3	64
Shumard oak	Quercus shumardii	NSL	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat		Migrate +	3	65
cabbage palmetto	Sabal palmetto	NDH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			0	66