

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
 8,187.6 3,161.2 215

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	3			High	11	15	Increase	16	18	Very Good	7	9	Likely	3	3
Hickory	4			Medium	31	39	No Change	10	10	Good	11	12	Infill	8	12
Maple	2	Abundant	7	Low	23	11	Decrease	14	12	Fair	5	3	Migrate	1	5
Oak	8	Common	14	FIA	3		New	10	10	Poor	10	10			
Pine	5	Rare	22				Unknown	18	18	Very Poor	6	5			
Other	21	Absent	25							FIA Only	3	3			
	43		68		68	65		68	68	Unknown	15	15			
											57	57			

Potential Changes in Climate Variables

Temperature (°F)

Scenario	2009	2039	2069	2099	
Annual	70.2	71.7	73.3	73.2	
Average	70.2	71.8	74.0	76.2	
GFDL45	70.2	72.9	74.5	75.3	
GFDL85	70.2	72.6	75.5	78.9	
HAD45	70.2	72.0	74.4	75.6	
HAD85	70.2	72.6	75.2	78.8	
Growing Season	79.7	80.9	82.1	82.3	
May—Sep	79.7	80.9	83.1	85.5	
GFDL45	79.7	82.3	83.7	84.7	
GFDL85	79.7	82.1	84.8	88.5	
HAD45	79.7	82.2	84.1	85.4	
HAD85	79.7	82.5	86.0	89.3	
Coldest Month	55.1	57.4	58.3	58.0	
Average	55.1	56.9	57.9	59.3	
GFDL45	55.1	57.7	58.2	58.8	
GFDL85	55.1	57.4	58.5	59.5	
HAD45	55.1	54.9	56.2	56.9	
HAD85	55.1	55.7	56.4	58.4	
Warmest Month	81.8	83.2	84.0	84.0	
Average	81.8	83.2	84.5	85.9	
GFDL45	81.8	84.1	84.9	85.7	
GFDL85	81.8	84.2	85.7	87.6	
HAD45	81.8	84.7	85.5	86.1	
HAD85	81.8	84.7	86.7	88.1	

Precipitation (in)

Scenario	2009	2039	2069	2099	
Annual	51.3	55.0	56.9	57.6	
Total	51.3	54.0	55.7	55.8	
GFDL45	51.3	59.7	61.4	63.7	
GFDL85	51.3	55.7	64.0	61.4	
HAD45	51.3	50.2	50.1	52.8	
HAD85	51.3	48.9	48.6	47.4	
Growing Season	31.0	33.5	33.6	34.0	
May—Sep	31.0	32.4	34.0	33.0	
GFDL45	31.0	36.5	37.2	37.8	
GFDL85	31.0	34.9	39.4	38.0	
HAD45	31.0	30.6	30.4	29.1	
HAD85	31.0	28.6	25.9	25.2	

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
sand pine	Pinus clausa	NDH	High	25.5	1237.4	44.4	No change	No change	Low	Abundant	Fair	Fair			0	1
longleaf pine	Pinus palustris	NSH	Medium	45.2	1075.2	26.9	No change	No change	Medium	Abundant	Good	Good			1	2
slash pine	Pinus elliotii	NDH	High	40.2	1057.2	27.3	Sm. inc.	Sm. inc.	Medium	Abundant	Very Good	Very Good			1	3
live oak	Quercus virginiana	NDH	High	65.8	837.4	14.7	Sm. inc.	Sm. inc.	Medium	Abundant	Very Good	Very Good			1	4
laurel oak	Quercus laurifolia	NDH	Medium	63.4	720.1	13.7	No change	No change	Medium	Abundant	Good	Good			1	5
loblolly pine	Pinus taeda	WDH	High	34.2	573.5	17.9	No change	Sm. inc.	Medium	Abundant	Good	Very Good			1	6
turkey oak	Quercus laevis	NSH	Medium	40.3	561.6	16.3	Sm. dec.	Sm. dec.	High	Abundant	Good	Good			1	7
sweetgum	Liquidambar styraciflua	WDH	High	32.8	276.2	9.0	No change	Sm. inc.	Medium	Common	Fair	Good			1	8
red maple	Acer rubrum	WDH	High	24.3	272.8	13.1	Sm. inc.	Sm. inc.	High	Common	Very Good	Very Good			1	9
water oak	Quercus nigra	WDH	High	23.2	184.5	12.6	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good			1	10
bald cypress	Taxodium distichum	NSH	Medium	13.4	168.6	16.8	Sm. inc.	Sm. inc.	Medium	Common	Good	Good	Infill ++	Infill ++	1	11
cabbage palmetto	Sabal palmetto	NDH	Medium	18.2	144.4	7.2	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good			0	12
bluejack oak	Quercus incana	NSL	Low	15.9	97.8	7.7	Lg. dec.	Sm. dec.	Medium	Common	Poor	Poor			0	13
swamp tupelo	Nyssa biflora	NDH	Medium	19.5	90.5	5.4	Lg. inc.	Lg. inc.	Low	Common	Good	Good			1	14
pond pine	Pinus serotina	NSH	Medium	6.1	83.1	12.6	No change	No change	Low	Common	Poor	Poor	Infill +	Infill +	0	15
pond cypress	Taxodium ascendens	NSH	Medium	11	82.8	7.0	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good	Infill ++	Infill ++	1	16
loblolly-bay	Gordonia lasianthus	NSH	Medium	15.9	82.7	6.3	Sm. inc.	Lg. inc.	Medium	Common	Good	Very Good			1	17
black cherry	Prunus serotina	WDL	Medium	24.3	78.7	4.8	Sm. inc.	Lg. inc.	Low	Common	Fair	Good			1	18
pignut hickory	Carya glabra	WDL	Medium	12.1	73.6	8.4	Sm. dec.	Sm. dec.	Medium	Common	Poor	Poor	Infill +	Infill +	0	19
redbay	Persea borbonia	NSL	Low	27.9	68.7	3.2	Sm. inc.	Sm. inc.	High	Common	Very Good	Very Good			1	20
pumpkin ash	Fraxinus profunda	NSH	FIA	7.2	66.5	8.4	Unknown	Unknown	NA	Common	FIA Only	FIA Only			0	21
sweetbay	Magnolia virginiana	NSL	Medium	14.7	39.6	5.5	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			1	22
American hornbeam; muscle	Carpinus caroliniana	WSL	Low	8.5	35.7	3.9	Sm. dec.	No change	Medium	Rare	Very Poor	Poor		Infill +	1	23
American elm	Ulmus americana	WDH	Medium	11	22.9	1.9	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good	Infill ++	Infill ++	1	24
southern magnolia	Magnolia grandiflora	NSL	Low	4.9	17.3	3.3	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	1	25
sand hickory	Carya pallida	NSL	FIA	1.2	15.6	11.8	Unknown	Unknown	NA	Rare	FIA Only	FIA Only			0	26
sugarberry	Celtis laevigata	NDH	Medium	3.7	14.0	3.5	Sm. inc.	Lg. inc.	Medium	Rare	Fair	Good		Infill ++	2	27
common persimmon	Diospyros virginiana	NSL	Low	3.7	12.0	3.0	Sm. dec.	Sm. dec.	High	Rare	Poor	Poor			1	28
blackgum	Nyssa sylvatica	WDL	Medium	4.9	11.5	2.2	Lg. inc.	Lg. inc.	High	Rare	Good	Good	Infill ++	Infill ++	1	29
blackjack oak	Quercus marilandica	NSL	Medium	1.2	11.5	8.7	Sm. dec.	Sm. dec.	High	Rare	Poor	Poor		Infill +	2	30
flowering dogwood	Cornus florida	WDL	Medium	4.9	9.9	1.9	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	31
swamp chestnut oak	Quercus michauxii	NSL	Low	3.7	8.8	2.2	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	32
Carolina ash	Fraxinus caroliniana	NSL	FIA	1.2	8.5	6.4	Unknown	Unknown	NA	Rare	FIA Only	FIA Only			0	33
American holly	Ilex opaca	NSL	Medium	6	8.0	1.2	No change	No change	Medium	Rare	Poor	Poor	Infill +		2	34
eastern redcedar	Juniperus virginiana	WDH	Medium	1.2	6.2	4.7	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	35
white ash	Fraxinus americana	WDL	Medium	1.2	5.6	4.3	Sm. dec.	Sm. dec.	Low	Rare	Very Poor	Very Poor			0	36
mockernut hickory	Carya alba	WDL	Medium	1.2	5.1	3.9	No change	No change	High	Rare	Fair	Fair		Infill +	2	37
florida maple	Acer barbatum	NSL	Low	1.2	4.9	3.7	Sm. dec.	Sm. dec.	High	Rare	Poor	Poor			0	38
winged elm	Ulmus alata	WDL	Medium	2.4	4.3	1.6	No change	No change	Medium	Rare	Poor	Poor		Infill +	2	39
post oak	Quercus stellata	WDH	High	1.2	2.8	2.1	Lg. inc.	Lg. inc.	High	Rare	Good	Good			2	40
eastern hophornbeam; ironw	Ostrya virginiana	WSL	Low	1.2	1.1	0.9	Sm. dec.	No change	High	Rare	Poor	Fair			0	41
water hickory	Carya aquatica	NSL	Medium	1.2	0.8	0.6	Very Lg. dec.	Very Lg. dec.	Medium	Rare	Lost	Lost			0	42
pawpaw	Asimina triloba	NSL	Low	1.2	0.4	0.3	Sm. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	43
shortleaf pine	Pinus echinata	WDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	44
serviceberry	Amelanchier spp.	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	45
sweet birch	Betula lenta	NDH	High	0	0	0	Unknown	Unknown	Low	Absent	Unknown	Unknown			0	46
river birch	Betula nigra	NSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate +	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
gray birch	Betula populifolia	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	48
cittamwood/gum bumelia	Sideroxylon lanuginosum ssp.	NSL	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat			0	49
shagbark hickory	Carya ovata	WSL	Medium	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	50
eastern redbud	Cercis canadensis	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	51
black ash	Fraxinus nigra	WSH	Medium	0	0	0	Unknown	Unknown	Low	Absent	Unknown	Unknown			0	52
green ash	Fraxinus pennsylvanica	WSH	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Likely +	Likely +	3	53
silverbell	Halesia spp.	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	54
cucumbertree	Magnolia acuminata	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	55
bigleaf magnolia	Magnolia macrophylla	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	56
water tupelo	Nyssa aquatica	NSH	Medium	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat			3	57
sourwood	Oxydendrum arboreum	NDL	High	0	0	0	Unknown	Unknown	High	Absent	Unknown	Unknown			0	58
pin cherry	Prunus pensylvanica	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	59
white oak	Quercus alba	WDH	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat		Migrate +	3	60
scarlet oak	Quercus coccinea	WDL	Medium	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	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
Nuttall oak	Quercus texana	NSH	Medium	0	0	0	Unknown	Unknown	High	Absent	Unknown	Unknown			0	63
willow oak	Quercus phellos	NSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate +	3	64
black locust	Robinia pseudoacacia	NDH	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	65
black willow	Salix nigra	NSH	Low	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat		Migrate +	3	66
American mountain-ash	Sorbus americana	NSL	Low	0	0	0	Unknown	Unknown	Low	Absent	Unknown	Unknown			0	67
cedar elm	Ulmus crassifolia	NDH	Medium	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat	Likely +	Likely +	3	68