

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
 8,270.3 3,193.2 183

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		
		Abundant	Common	Reliability	Adaptability	Scenario	Scenario	Scenario	Scenario	SHIFT	SHIFT	
				High	10	15	RCP45	RCP85	RCP45	RCP85	RCP45	RCP85
Ash	3						Increase	17	20	Very Good	6	6
Hickory	2						No Change	12	10	Good	9	11
Maple	2	Abundant	5				Decrease	17	16	Fair	9	9
Oak	10	Common	14	Medium	31	42				Poor	14	13
Pine	6	Rare	29	Low	24	8	New	4	5	Very Poor	7	6
Other	25	Absent	16	FIA	2		Unknown	17	16	FIA Only	2	2
	48		64		67	65		67	67	Unknown	15	14
											62	61

Potential Changes in Climate Variables

Temperature (°F)

Scenario	2009	2039	2069	2099	
Annual	70.5	71.9	73.5	73.4	
Average	70.5	72.0	74.2	76.3	
GFDL45	70.5	73.3	74.7	75.5	
GFDL85	70.5	72.8	75.7	79.1	
HAD45	70.5	72.2	74.6	75.9	
HAD85	70.5	72.9	75.5	79.1	
Growing Season	79.6	80.9	82.0	82.2	
May—Sep	79.6	82.3	83.6	84.7	
GFDL45	79.6	82.0	84.8	88.4	
GFDL85	79.6	82.2	84.1	85.4	
HAD45	79.6	82.5	85.9	89.3	
HAD85	79.6	82.5	85.9	89.3	
Coldest Month	55.6	57.9	58.8	58.6	
Average	55.6	58.3	58.7	59.3	
GFDL45	55.6	57.9	59.1	60.1	
GFDL85	55.6	55.4	56.7	57.4	
HAD45	55.6	56.3	56.9	58.9	
HAD85	55.6	56.3	56.9	58.9	
Warmest Month	81.7	83.1	83.8	83.9	
Average	81.7	83.1	84.3	85.7	
GFDL45	81.7	84.0	84.9	85.6	
GFDL85	81.7	84.1	85.6	87.5	
HAD45	81.7	84.5	85.3	85.9	
HAD85	81.7	84.5	86.5	87.9	

Precipitation (in)

Scenario	2009	2039	2069	2099	
Annual	51.7	55.6	57.7	58.4	
Total	51.7	54.6	56.3	56.0	
GFDL45	51.7	59.7	61.7	64.0	
GFDL85	51.7	56.1	64.4	61.2	
HAD45	51.7	51.4	51.8	54.4	
HAD85	51.7	50.0	50.0	49.2	
Growing Season	31.7	34.4	34.7	34.9	
May—Sep	31.7	33.1	34.9	33.6	
GFDL45	31.7	36.9	37.7	38.3	
GFDL85	31.7	35.6	40.0	38.0	
HAD45	31.7	31.7	32.0	30.4	
HAD85	31.7	29.6	27.0	26.4	

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
longleaf pine	Pinus palustris	NSH	Medium	53.2	1080.3	23.2	No change	No change	Medium	Abundant	Good	Good			2	1
laurel oak	Quercus laurifolia	NDH	Medium	80.7	1049.9	15.1	No change	Sm. dec.	Medium	Abundant	Good	Fair	Infill +		2	2
live oak	Quercus virginiana	NDH	High	69.9	794.3	13.9	Sm. inc.	Lg. inc.	Medium	Abundant	Very Good	Very Good			2	3
slash pine	Pinus elliotii	NDH	High	38.3	731.4	21.9	Sm. inc.	Sm. inc.	Medium	Abundant	Very Good	Very Good			2	4
turkey oak	Quercus laevis	NSH	Medium	46.1	626.9	18.4	Lg. dec.	Lg. dec.	High	Abundant	Good	Good			2	5
loblolly pine	Pinus taeda	WDH	High	28.7	431.8	17.5	No change	Sm. inc.	Medium	Common	Fair	Good	Infill +		2	6
sweetgum	Liquidambar styraciflua	WDH	High	49.7	356.9	8.4	No change	No change	Medium	Common	Fair	Fair	Infill +	Infill +	2	7
sand pine	Pinus clausa	NDH	High	12.1	314.1	24.4	Sm. inc.	No change	Low	Common	Fair	Poor	Infill +	Infill +	2	8
pond cypress	Taxodium ascendens	NSH	Medium	23.1	306.0	16.6	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good			2	9
red maple	Acer rubrum	WDH	High	36.1	257.9	8.2	Sm. inc.	Sm. inc.	High	Common	Very Good	Very Good			2	10
bald cypress	Taxodium distichum	NSH	Medium	25.1	238.1	12.0	Sm. inc.	Sm. inc.	Medium	Common	Good	Good			2	11
cabbage palmetto	Sabal palmetto	NDH	Medium	31.1	229.4	8.9	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good			0	12
water oak	Quercus nigra	WDH	High	39.6	173.1	6.4	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good			2	13
bluejack oak	Quercus incana	NSL	Low	29.2	124.8	5.9	Lg. dec.	Sm. dec.	Medium	Common	Poor	Poor			0	14
swamp tupelo	Nyssa biflora	NDH	Medium	34	123.9	5.0	Lg. inc.	Lg. inc.	Low	Common	Good	Good			2	15
black cherry	Prunus serotina	WDL	Medium	25.4	102.5	5.8	Sm. inc.	Sm. inc.	Low	Common	Fair	Fair	Infill +	Infill +	2	16
eastern cottonwood	Populus deltoides	NSH	Low	1.2	64.3	50.0	Sm. dec.	Sm. dec.	Medium	Common	Poor	Poor			0	17
American hornbeam; muscley	Carpinus caroliniana	WSL	Low	16.6	59.7	3.9	Sm. dec.	No change	Medium	Common	Poor	Fair	Infill +	Infill +	2	18
pignut hickory	Carya glabra	WDL	Medium	14.5	54.3	3.5	No change	No change	Medium	Common	Fair	Fair			0	19
American elm	Ulmus americana	WDH	Medium	26.4	48.2	2.3	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			2	20
pumpkin ash	Fraxinus profunda	NSH	FIA	14.6	47.2	5.0	Unknown	Unknown	NA	Rare	FIA Only	FIA Only			0	21
southern magnolia	Magnolia grandiflora	NSL	Low	14.2	38.7	3.0	Sm. inc.	Sm. inc.	Medium	Rare	Fair	Fair			0	22
florida maple	Acer barbatum	NSL	Low	3.6	28.3	7.3	Lg. dec.	Lg. dec.	High	Rare	Poor	Poor			0	23
sweetbay	Magnolia virginiana	NSL	Medium	17.1	25.4	2.3	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			2	24
loblolly-bay	Gordonia lasianthus	NSH	Medium	3.6	24.7	6.4	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	2	25
post oak	Quercus stellata	WDH	High	8.2	23.6	3.8	No change	Sm. inc.	High	Rare	Fair	Good			0	26
sugarberry	Celtis laevigata	NDH	Medium	9.4	21.3	2.4	No change	Sm. inc.	Medium	Rare	Poor	Fair		Infill +	2	27
redbay	Persea borbonia	NSL	Low	25.2	20.9	1.4	Lg. inc.	Lg. inc.	High	Rare	Good	Good			2	28
Carolina ash	Fraxinus caroliniana	NSL	FIA	9	18.0	2.9	Unknown	Unknown	NA	Rare	FIA Only	FIA Only			0	29
green ash	Fraxinus pennsylvanica	WSH	Low	5.7	17.5	4.6	No change	No change	Medium	Rare	Poor	Poor		Infill +	2	30
blackjack oak	Quercus marilandica	NSL	Medium	1.2	11.2	8.7	Sm. dec.	Sm. dec.	High	Rare	Poor	Poor			0	31
eastern redcedar	Juniperus virginiana	WDH	Medium	10.3	9.1	1.7	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	32
blackgum	Nyssa sylvatica	WDL	Medium	4.8	8.2	1.6	Lg. inc.	Lg. inc.	High	Rare	Good	Good			2	33
common persimmon	Diospyros virginiana	NSL	Low	8.2	8.0	1.3	Lg. dec.	Lg. dec.	High	Rare	Poor	Poor			0	34
swamp chestnut oak	Quercus michauxii	NSL	Low	2.4	7.2	2.8	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	35
Shumard oak	Quercus shumardii	NSL	Low	2.4	6.1	2.4	Sm. dec.	Sm. dec.	High	Rare	Poor	Poor			0	36
hackberry	Celtis occidentalis	WDH	Medium	3.3	4.8	1.9	Sm. dec.	Sm. dec.	High	Rare	Poor	Poor			0	37
American beech	Fagus grandifolia	WDH	High	1.2	3.0	2.4	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	38
pond pine	Pinus serotina	NSH	Medium	1.2	3.0	2.3	Lg. inc.	Lg. inc.	Low	Rare	Fair	Fair			2	39
spruce pine	Pinus glabra	NSL	Low	1.2	2.4	1.9	Very Lg. dec.	Very Lg. dec.	Medium	Rare	Lost	Lost			0	40
winged elm	Ulmus alata	WDL	Medium	7.8	2.4	0.5	No change	No change	Medium	Rare	Poor	Poor			0	41
flowering dogwood	Cornus florida	WDL	Medium	3.6	2.3	0.6	Sm. dec.	No change	Medium	Rare	Very Poor	Poor			0	42
mockernut hickory	Carya alba	WDL	Medium	1.2	1.9	1.5	No change	Sm. inc.	High	Rare	Fair	Good			0	43
eastern hophornbeam; ironw	Ostrya virginiana	WSL	Low	2.4	1.9	0.8	Lg. dec.	Sm. dec.	High	Rare	Poor	Poor			0	44
water tupelo	Nyssa aquatica	NSH	Medium	1.2	1.4	1.1	Sm. inc.	No change	Low	Rare	Poor	Very Poor			2	45
cedar elm	Ulmus crassifolia	NDH	Medium	1.2	1.3	1.0	No change	Lg. inc.	Low	Rare	Very Poor	Fair		Infill +	2	46
American basswood	Tilia americana	WSL	Medium	1.2	0.4	0.3	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very 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	
cherrybark oak; swamp red o.	Quercus pagoda	NSL	Medium	3.3	0.1	0.1	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor				0	48
shortleaf pine	Pinus echinata	WDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat				3	49
serviceberry	Amelanchier spp.	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown				0	50
pawpaw	Asimina triloba	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown				0	51
river birch	Betula nigra	NSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat				3	52
cittamwood/gum bumelia	Sideroxylon lanuginosum ssp.	NSL	Low	0	0	0	Unknown	New Habitat	High	Absent	Unknown	New Habitat				0	53
shagbark hickory	Carya ovata	WSL	Medium	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown				0	54
eastern redbud	Cercis canadensis	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown				0	55
white ash	Fraxinus americana	WDL	Medium	0	0	0	Unknown	Unknown	Low	Modeled	Unknown	Unknown				0	56
silverbell	Halesia spp.	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown				0	57
American holly	Ilex opaca	NSL	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Likely +	Likely +		3	58
cucumbertree	Magnolia acuminata	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown				0	59
bigleaf magnolia	Magnolia macrophylla	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown				0	60
water elm	Planera aquatica	NSL	Low	0	0	0	Unknown	Unknown	Medium	Modeled	Unknown	Unknown				0	61
scarlet oak	Quercus coccinea	WDL	Medium	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown				0	62
southern red oak	Quercus falcata	WDL	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat				3	63
Nuttall oak	Quercus texana	NSH	Medium	0	0	0	Unknown	Unknown	High	Absent	Unknown	Unknown				0	64
willow oak	Quercus phellos	NSL	Low	0	0	0	Unknown	Unknown	Medium	Modeled	Unknown	Unknown				0	65
black locust	Robinia pseudoacacia	NDH	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown				0	66
American mountain-ash	Sorbus americana	NSL	Low	0	0	0	Unknown	Unknown	Low	Absent	Unknown	Unknown				0	67