

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
 8,318.1 3,211.6 195

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				
						RCP45	RCP85	RCP45	RCP85	RCP45	RCP85				
Ash	4			High	9	11	Increase	13	14	Very Good	5	7	Likely	0	0
Hickory	3			Medium	30	37	No Change	12	11	Good	9	7	Infill	0	0
Maple	1	Abundant	4	Low	18	9	Decrease	12	12	Fair	5	7	Migrate	0	0
Oak	6	Common	14	FIA	3		New	3	3	Poor	7	5		0	0
Pine	5	Rare	22				Unknown	20	20	Very Poor	9	9			
Other	21	Absent	13							FIA Only	3	3			
	40		53		60	57		60	60	Unknown	17	17			
											55	55			

Potential Changes in Climate Variables

Temperature (°F)

Scenario	2009	2039	2069	2099	
Annual	71.4	72.7	74.2	74.2	
Average	71.4	72.9	74.9	77.0	
GFDL45	71.4	74.3	75.5	76.3	
GFDL85	71.4	73.7	76.5	79.8	
HAD45	71.4	72.9	75.0	76.1	
HAD85	71.4	73.4	75.7	79.0	
Growing Season	80.2	81.3	82.5	82.7	
May—Sep	80.2	81.4	83.5	85.8	
GFDL45	80.2	83.1	84.1	85.1	
GFDL85	80.2	82.5	85.3	88.8	
HAD45	80.2	82.3	84.0	85.1	
HAD85	80.2	82.7	85.5	88.5	
Coldest Month	57.0	59.1	60.0	59.7	
Average	57.0	58.4	59.3	60.8	
GFDL45	57.0	59.6	60.0	60.6	
GFDL85	57.0	59.2	60.4	61.4	
HAD45	57.0	56.8	58.0	58.6	
HAD85	57.0	57.5	58.2	60.0	
Warmest Month	82.4	83.6	84.3	84.3	
Average	82.4	83.6	84.9	86.2	
GFDL45	82.4	84.5	85.4	86.1	
GFDL85	82.4	84.7	86.2	88.0	
HAD45	82.4	84.7	85.4	86.0	
HAD85	82.4	84.7	86.3	87.5	

Precipitation (in)

Scenario	2009	2039	2069	2099	
Annual	51.4	54.5	55.3	56.6	
Total	51.4	53.8	53.9	53.5	
GFDL45	51.4	60.7	61.8	63.8	
GFDL85	51.4	55.7	64.9	61.8	
HAD45	51.4	50.0	48.5	51.6	
HAD85	51.4	47.7	48.3	45.6	
Growing Season	31.2	33.5	32.4	33.9	
May—Sep	31.2	32.9	32.6	30.8	
GFDL45	31.2	36.6	36.9	37.0	
GFDL85	31.2	34.4	38.9	37.3	
HAD45	31.2	30.6	29.0	28.1	
HAD85	31.2	28.1	25.6	24.2	

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.

Cite as: Iverson, L.R.; Prasad, A.M.; Peters, M.P.; Matthews, S.N. 2019. Facilitating Adaptive Forest Management under Climate Change: A Spatially Specific Synthesis of 125 Species for Habitat Changes and Assisted Migration over the Eastern United States. *Forests*. 10(11): 989. <https://doi.org/10.3390/f10110989>.

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
slash pine	Pinus elliottii	NDH	High	61.9	2240.5	34.6	No change	No change	Medium	Abundant	Good	Good			0	1
cabbage palmetto	Sabal palmetto	NDH	Medium	54	974.8	20.8	Sm. inc.	Sm. inc.	Medium	Abundant	Very Good	Very Good			0	2
sand pine	Pinus clausa	NDH	High	21.2	702.9	38.3	Sm. dec.	Sm. dec.	Low	Abundant	Fair	Fair			0	3
pond cypress	Taxodium ascendens	NSH	Medium	29.9	569.8	20.3	Sm. inc.	Lg. inc.	Medium	Abundant	Very Good	Very Good			0	4
longleaf pine	Pinus palustris	NSH	Medium	24	427.6	26.6	Sm. inc.	No change	Medium	Common	Good	Fair			0	5
red maple	Acer rubrum	WDH	High	43.9	391.5	12.0	No change	No change	High	Common	Good	Good			0	6
laurel oak	Quercus laurifolia	NDH	Medium	48.1	356.1	8.7	Sm. inc.	Sm. inc.	Medium	Common	Good	Good			0	7
live oak	Quercus virginiana	NDH	High	47	347.6	9.2	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good			0	8
loblolly-bay	Gordonia lasianthus	NSH	Medium	35.6	287.2	8.3	No change	No change	Medium	Common	Fair	Fair			0	9
swamp tupelo	Nyssa biflora	NDH	Medium	40.7	268.1	7.6	Sm. inc.	Sm. inc.	Low	Common	Fair	Fair			0	10
sweetgum	Liquidambar styraciflua	WDH	High	31.2	192.0	5.7	No change	No change	Medium	Common	Fair	Fair			0	11
sweetbay	Magnolia virginiana	NSL	Medium	31.1	133.3	5.3	Sm. inc.	Sm. inc.	Medium	Common	Good	Good			0	12
bald cypress	Taxodium distichum	NSH	Medium	18	123.4	8.5	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good			0	13
pond pine	Pinus serotina	NSH	Medium	13.5	115.8	13.0	No change	Sm. inc.	Low	Common	Poor	Fair			0	14
loblolly pine	Pinus taeda	WDH	High	12	98.8	7.7	Sm. inc.	Lg. inc.	Medium	Common	Good	Very Good			0	15
redbay	Persea borbonia	NSL	Low	31.9	67.4	2.2	Sm. inc.	Sm. inc.	High	Common	Very Good	Very Good			0	16
American elm	Ulmus americana	WDH	Medium	26.3	64.6	2.7	Sm. inc.	Lg. inc.	Medium	Common	Good	Very Good			0	17
pumpkin ash	Fraxinus profunda	NSH	FIA	7.5	61.5	8.0	Unknown	Unknown	NA	Common	FIA Only	FIA Only			0	18
water oak	Quercus nigra	WDH	High	19.1	49.6	2.4	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			0	19
green ash	Fraxinus pennsylvanica	WSH	Low	5.9	47.8	7.3	No change	No change	Medium	Rare	Poor	Poor			0	20
pignut hickory	Carya glabra	WDL	Medium	4.6	31.5	5.9	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	21
eastern redcedar	Juniperus virginiana	WDH	Medium	8.4	26.9	5.3	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	22
turkey oak	Quercus laevis	NSH	Medium	7.2	19.1	7.0	No change	No change	High	Rare	Fair	Fair			0	23
sugarberry	Celtis laevigata	NDH	Medium	6.9	16.8	3.0	No change	Lg. inc.	Medium	Rare	Poor	Good			0	24
sand hickory	Carya pallida	NSL	FIA	2.3	15.8	6.1	Unknown	Unknown	NA	Rare	FIA Only	FIA Only			0	25
black cherry	Prunus serotina	WDL	Medium	8.3	14.7	3.2	No change	No change	Low	Rare	Very Poor	Very Poor			0	26
American hornbeam; muscley	Carpinus caroliniana	WSL	Low	8.2	14.5	1.6	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	27
Carolina ash	Fraxinus caroliniana	NSL	FIA	4	13.5	3.5	Unknown	Unknown	NA	Rare	FIA Only	FIA Only			0	28
southern magnolia	Magnolia grandiflora	NSL	Low	7.1	10.9	2.3	No change	No change	Medium	Rare	Poor	Poor			0	29
blackgum	Nyssa sylvatica	WDL	Medium	8.4	9.8	2.6	Sm. inc.	Sm. inc.	High	Rare	Good	Good			0	30
American holly	Ilex opaca	NSL	Medium	5.9	7.1	1.1	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	31
common persimmon	Diospyros virginiana	NSL	Low	7.1	6.8	0.9	Lg. dec.	Lg. dec.	High	Rare	Poor	Poor			0	32
water hickory	Carya aquatica	NSL	Medium	2.4	6.5	2.5	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	33
water tupelo	Nyssa aquatica	NSH	Medium	1.2	5.8	4.5	No change	No change	Low	Rare	Very Poor	Very Poor			0	34
bluejack oak	Quercus incana	NSL	Low	1.2	5.7	4.4	No change	No change	Medium	Rare	Poor	Poor			0	35
red mulberry	Morus rubra	NSL	Low	1.2	1.3	1.0	Very Lg. dec.	Very Lg. dec.	Medium	Rare	Lost	Lost			0	36
hackberry	Celtis occidentalis	WDH	Medium	1.1	1.1	0.8	Very Lg. dec.	Very Lg. dec.	High	Rare	Lost	Lost			0	37
blackjack oak	Quercus marilandica	NSL	Medium	1.2	0.5	0.4	Lg. dec.	Lg. dec.	High	Rare	Poor	Poor			0	38
pawpaw	Asimina triloba	NSL	Low	1.2	0.4	0.3	Sm. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	39
white ash	Fraxinus americana	WDL	Medium	3.5	0.4	0.9	Sm. dec.	Sm. dec.	Low	Rare	Very Poor	Very Poor			0	40
striped maple	Acer pensylvanicum	NSL	Medium	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	41
serviceberry	Amelanchier spp.	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	42
river birch	Betula nigra	NSL	Low	0	0	0	Unknown	Unknown	Medium	Modeled	Unknown	Unknown			0	43
pecan	Carya illinoensis	NSH	Low	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat			0	44
shagbark hickory	Carya ovata	WSL	Medium	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	45
mockernut hickory	Carya alba	WDL	Medium	0	0	0	Unknown	Unknown	High	Modeled	Unknown	Unknown			0	46
flowering dogwood	Cornus florida	WDL	Medium	0	0	0	Unknown	Unknown	Medium	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
silverbell	Halesia spp.	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown				0 48
cucumbertree	Magnolia acuminata	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown				0 49
bigleaf magnolia	Magnolia macrophylla	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown				0 50
sourwood	Oxydendrum arboreum	NDL	High	0	0	0	Unknown	Unknown	High	Absent	Unknown	Unknown				0 51
sycamore	Platanus occidentalis	NSL	Low	0	0	0	Unknown	Unknown	Medium	Modeled	Unknown	Unknown				0 52
southern red oak	Quercus falcata	WDL	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat				0 53
chinkapin oak	Quercus muehlenbergii	NSL	Medium	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown				0 54
post oak	Quercus stellata	WDH	High	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat				0 55
black locust	Robinia pseudoacacia	NDH	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown				0 56
black willow	Salix nigra	NSH	Low	0	0	0	Unknown	Unknown	Low	Modeled	Unknown	Unknown				0 57
American mountain-ash	Sorbus americana	NSL	Low	0	0	0	Unknown	Unknown	Low	Absent	Unknown	Unknown				0 58
American basswood	Tilia americana	WSL	Medium	0	0	0	Unknown	Unknown	Medium	Modeled	Unknown	Unknown				0 59
winged elm	Ulmus alata	WDL	Medium	0	0	0	Unknown	Unknown	Medium	Modeled	Unknown	Unknown				0 60