

One x One Degree
Climate Change Atlas Tree Species
Current and Potential Future Habitat, Capability, and Migration

Area of Region sq. km 5,949.2 sq. mi 2,297.0 FIA Plots 104

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	High	Medium	Scenario RCP45	Scenario RCP85	Scenario RCP45	Scenario RCP85	SHIFT RCP45	SHIFT RCP85				
Ash	3					Increase	12	15	Very Good	5	4	Likely	2	2	
Hickory	3					No Change	13	8	Good	11	11	Infill	5	4	
Maple	5	Abundant	3	High	16	21	Decrease	20	22	Fair	9	11	Migrate	8	12
Oak	9	Common	22	Medium	25	40	New	20	21	Poor	8	6		15	18
Pine	2	Rare	24	Low	30	11	Unknown	10	9	Very Poor	10	9			
Other	27	Absent	23	FIA	4					FIA Only	1	1			
	49		72		75	72		75	75		50	47			

Potential Changes in Climate Variables

Temperature (°F)					Precipitation (in)						
Scenario	2009	2039	2069	2099	Scenario	2009	2039	2069	2099		
Annual	CCSM45	49.8	51.6	54.3	54.3	Annual	CCSM45	39.8	40.7	40.7	42.5
Average	CCSM85	49.8	52.2	54.8	58.0	Total	CCSM85	39.8	41.4	42.0	43.1
	GFDL45	49.8	53.9	55.7	56.7		GFDL45	39.8	43.8	46.9	47.6
	GFDL85	49.8	53.1	56.7	61.0		GFDL85	39.8	42.0	47.5	49.8
	HAD45	49.8	52.9	56.4	58.2		HAD45	39.8	40.3	41.5	41.3
	HAD85	49.8	53.1	57.7	62.8		HAD85	39.8	41.9	38.8	42.4
Growing	CCSM45	66.5	68.3	70.6	71.0	Growing	CCSM45	18.8	18.9	18.6	19.1
Season	CCSM85	66.5	68.8	71.3	75.3	Season	CCSM85	18.8	18.4	18.8	18.0
May—Sep	GFDL45	66.5	71.3	73.6	75.1	May—Sep	GFDL45	18.8	20.7	21.4	21.9
	GFDL85	66.5	70.6	74.8	79.7		GFDL85	18.8	19.7	21.2	21.6
	HAD45	66.5	70.0	73.0	75.4		HAD45	18.8	18.9	17.3	18.1
	HAD85	66.5	69.8	75.3	80.9		HAD85	18.8	18.8	15.3	16.1
Coldest	CCSM45	24.0	25.9	27.9	27.9						
Month	CCSM85	24.0	26.9	28.1	30.2						
Average	GFDL45	24.0	27.0	28.0	28.8						
	GFDL85	24.0	27.6	28.8	30.5						
	HAD45	24.0	25.3	28.5	28.7						
	HAD85	24.0	26.7	29.3	32.2						
Warmest	CCSM45	72.3	74.3	75.6	76.1						
Month	CCSM85	72.3	75.0	76.6	78.9						
Average	GFDL45	72.3	75.4	77.5	78.5						
	GFDL85	72.3	76.5	78.7	81.5						
	HAD45	72.3	76.3	78.4	80.0						
	HAD85	72.3	77.1	80.9	84.8						

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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Common Name	Scientific Name	Range	MR	%Cell	FIAsum	FIaiv	ChngCl45	ChngCl85	Adap	Abund	Capabil45	Capabil85	SHIFT45	SHIFT85	SSO	N		
sweetgum	Liquidambar styraciflua	WDH	High	6.8	1.3	0.4	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good				2	48	
scarlet oak	Quercus coccinea	WDL	Medium	2.3	0.2	0.2	Sm. inc.	Sm. inc.	Medium	Rare	Fair	Fair	Infill +				2	49
eastern redcedar	Juniperus virginiana	WDH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate ++	Migrate ++			3	50
shortleaf pine	Pinus echinata	WDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +	Migrate +			3	51
loblolly pine	Pinus taeda	WDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate ++			3	52
sweet birch	Betula lenta	NDH	High	0	0	0	Unknown	Unknown	Low	Modeled	Unknown	Unknown					0	53
pecan	Carya illinoensis	NSH	Low	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat					3	54
shellbark hickory	Carya laciniosa	NSL	Low	0	0	0	Unknown	Unknown	Medium	Modeled	Unknown	Unknown					0	55
black hickory	Carya texana	NDL	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat					0	56
mockernut hickory	Carya alba	WDL	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Likely +	Likely +			3	57
sugarberry	Celtis laevigata	NDH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat					3	58
hackberry	Celtis occidentalis	WDH	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Likely +	Likely +			3	59
eastern redbud	Cercis canadensis	NSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +	Migrate +			3	60
common persimmon	Diospyros virginiana	NSL	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Migrate +	Migrate +			3	61
blue ash	Fraxinus quadrangulata	NSL	Low	0	0	0	Unknown	Unknown	Low	Absent	Unknown	Unknown					0	62
honeylocust	Gleditsia triacanthos	NSH	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Migrate +	Migrate +			3	63
bigleaf magnolia	Magnolia macrophylla	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown					0	64
red mulberry	Morus rubra	NSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +	Migrate +			3	65
pin cherry	Prunus pensylvanica	NSL	Low	0	0	0	Unknown	Unknown	Medium	Modeled	Unknown	Unknown					0	66
southern red oak	Quercus falcata	WDL	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat		Migrate +			3	67
shingle oak	Quercus imbricaria	NDH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +	Migrate +			3	68
blackjack oak	Quercus marilandica	NSL	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat					3	69
water oak	Quercus nigra	WDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat					3	70
Shumard oak	Quercus shumardii	NSL	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat		Migrate +			3	71
post oak	Quercus stellata	WDH	High	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Migrate ++	Migrate ++			3	72
bluejack oak	Quercus incana	NSL	Low	0	0	0	Unknown	New Habitat	Medium	Absent	Unknown	New Habitat					0	73
winged elm	Ulmus alata	WDL	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate ++			3	74
cedar elm	Ulmus crassifolia	NDH	Medium	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat					0	75