

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

Area of Region sq. km sq. mi FIA Plots
 8,837.4 3,412.1 1

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	0				Increase	0	0	Very Good	0	0
Hickory	0		High	9	No Change	0	1	Good	0	0
Maple	0	Abundant	Medium	10	Decrease	1	0	Fair	0	0
Oak	0	Common	Low	11	New	22	22	Poor	0	1
Pine	0	Rare	FIA	1	Unknown	3	3	Very Poor	1	0
Other	2	Absent						FIA Only	0	0
	2	25		26	25		26	Unknown	2	2
									3	3

Potential Changes in Climate Variables

Temperature (°F)

Scenario	2009	2039	2069	2099		
Annual	CCSM45	45.7	47.5	49.9	50.6	
Average	CCSM85	45.7	48.1	50.9	54.3	
	GFDL45	45.7	51.6	50.2	51.6	
	GFDL85	45.7	48.3	51.5	56.0	
	HAD45	45.7	48.8	52.6	54.1	
	HAD85	45.7	49.2	54.5	58.9	
Growing Season	CCSM45	66.2	68.3	70.9	71.6	
	CCSM85	66.2	69.2	71.9	76.1	
May—Sep	GFDL45	66.2	73.9	72.1	73.9	
	GFDL85	66.2	69.6	73.2	78.9	
	HAD45	66.2	69.0	71.9	73.8	
	HAD85	66.2	69.0	73.4	78.1	
Coldest Month	CCSM45	14.1	16.1	17.5	18.2	
	CCSM85	14.1	15.1	16.7	19.1	
Average	GFDL45	14.1	17.4	18.1	18.6	
	GFDL85	14.1	17.2	18.5	20.6	
	HAD45	14.1	16.7	20.6	19.9	
	HAD85	14.1	19.8	24.7	26.5	
Warmest Month	CCSM45	73.9	76.7	78.4	79.2	
	CCSM85	73.9	77.8	79.8	82.7	
Average	GFDL45	73.9	77.7	79.1	80.3	
	GFDL85	73.9	78.3	80.0	83.7	
	HAD45	73.9	77.4	79.0	80.3	
	HAD85	73.9	77.4	80.1	83.3	

Precipitation (in)

Scenario	2009	2039	2069	2099		
Annual	CCSM45	20.4	20.9	20.7	19.9	
Total	CCSM85	20.4	20.1	20.6	21.1	
	GFDL45	20.4	24.2	26.3	25.1	
	GFDL85	20.4	23.7	27.0	26.3	
	HAD45	20.4	22.4	21.8	22.6	
	HAD85	20.4	22.1	22.6	24.1	
Growing Season	CCSM45	13.6	13.1	12.8	12.1	
	CCSM85	13.6	12.3	13.0	12.0	
May—Sep	GFDL45	13.6	16.3	17.4	16.2	
	GFDL85	13.6	15.7	17.2	16.3	
	HAD45	13.6	13.8	12.9	12.8	
	HAD85	13.6	13.4	12.9	11.9	

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
eastern cottonwood	Populus deltoides	NSH	Low	4	28.3	88.2	Sm. dec.	No change	Medium	Rare	Very Poor	Poor			2	1
Siberian elm	Ulmus pumila	NDH	FIA	2.6	28.3	57.9	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	2
ashe juniper	Juniperus ashei	NDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			0	3
eastern redcedar	Juniperus virginiana	WDH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate ++	Migrate ++	3	4
boxelder	Acer negundo	WSH	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat		Migrate +	3	5
mountain maple	Acer spicatum	NSL	Low	0	0	0	Unknown	Unknown	High	Absent	Unknown	Unknown			0	6
black hickory	Carya texana	NDL	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			0	7
sugarberry	Celtis laevigata	NDH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			0	8
hackberry	Celtis occidentalis	WDH	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	9
eastern redbud	Cercis canadensis	NSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	10
flowering dogwood	Cornus florida	WDL	Medium	0	0	0	Unknown	Unknown	Medium	Modeled	Unknown	Unknown			0	11
green ash	Fraxinus pennsylvanica	WSH	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate ++	Migrate ++	3	12
honeylocust	Gleditsia triacanthos	NSH	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat			3	13
black walnut	Juglans nigra	WDH	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate +	3	14
Osage-orange	Maclura pomifera	NDH	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat			3	15
red mulberry	Morus rubra	NSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	16
eastern hophornbeam; ironw	Ostrya virginiana	WSL	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Migrate +		3	17
sycamore	Platanus occidentalis	NSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			0	18
bur oak	Quercus macrocarpa	NDH	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Migrate ++	Migrate ++	3	19
blackjack oak	Quercus marilandica	NSL	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat			0	20
chinkapin oak	Quercus muehlenbergii	NSL	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			0	21
post oak	Quercus stellata	WDH	High	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat			0	22
live oak	Quercus virginiana	NDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			0	23
black locust	Robinia pseudoacacia	NDH	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	24
American basswood	Tilia americana	WSL	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +		3	25
American elm	Ulmus americana	WDH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +	Migrate ++	3	26