

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
 9,412.7 3,634.3 14

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	1			High	2	9	Increase	4	5	Very Good	0	0	Likely	1	1
Hickory	0			Medium	8	13	No Change	4	4	Good	3	3	Infill	7	7
Maple	1	Abundant	0	Low	14	3	Decrease	4	3	Fair	2	3	Migrate	2	6
Oak	1	Common	2	FIA	2		New	10	10	Poor	6	5			
Pine	0	Rare	12				Unknown	4	4	Very Poor	1	1			
Other	11	Absent	12							FIA Only	1	1			
	14		26		26	25		26	26	Unknown	2	2			
											15	15			

Potential Changes in Climate Variables

Temperature (°F)

Scenario	2009	2039	2069	2099		
Annual	CCSM45	51.5	53.3	55.2	56.0	
Average	CCSM85	51.5	53.8	56.2	59.1	
	GFDL45	51.5	57.6	56.2	57.6	
	GFDL85	51.5	54.2	57.4	61.7	
	HAD45	51.5	54.1	57.5	58.3	
	HAD85	51.5	54.7	59.6	62.8	
Growing Season	CCSM45	70.1	72.2	74.4	75.3	
	CCSM85	70.1	72.9	75.4	78.8	
May—Sep	GFDL45	70.1	78.3	76.1	78.3	
	GFDL85	70.1	73.8	77.4	82.8	
	HAD45	70.1	72.3	75.0	75.8	
	HAD85	70.1	73.1	77.9	80.7	
Coldest Month	CCSM45	23.0	25.3	26.2	27.2	
	CCSM85	23.0	25.4	26.4	28.2	
Average	GFDL45	23.0	26.2	26.6	26.9	
	GFDL85	23.0	25.2	26.7	28.0	
	HAD45	23.0	25.4	28.6	28.2	
	HAD85	23.0	28.2	31.4	33.4	
Warmest Month	CCSM45	76.8	79.1	80.9	81.5	
	CCSM85	76.8	80.6	82.1	84.3	
Average	GFDL45	76.8	80.5	81.7	83.3	
	GFDL85	76.8	81.2	82.6	86.5	
	HAD45	76.8	78.9	80.8	81.4	
	HAD85	76.8	80.7	83.2	85.0	

Precipitation (in)

Scenario	2009	2039	2069	2099		
Annual	CCSM45	29.1	30.3	30.2	29.1	
Total	CCSM85	29.1	29.7	29.6	30.9	
	GFDL45	29.1	32.7	35.2	33.6	
	GFDL85	29.1	32.9	36.6	34.8	
	HAD45	29.1	32.9	32.3	33.5	
	HAD85	29.1	31.0	30.8	33.4	
Growing Season	CCSM45	18.8	19.0	18.2	17.7	
	CCSM85	18.8	18.0	17.2	18.2	
May—Sep	GFDL45	18.8	21.4	22.5	20.6	
	GFDL85	18.8	21.0	23.1	21.2	
	HAD45	18.8	20.1	20.4	20.7	
	HAD85	18.8	19.4	18.3	18.0	

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
red mulberry	Morus rubra	NSL	Low	32.1	87.0	17.2	Sm. dec.	Lg. dec.	Medium	Common	Poor	Poor	Infill +	Infill +	2	1
bur oak	Quercus macrocarpa	NDH	Medium	18	62.1	22.1	Sm. dec.	Sm. dec.	High	Common	Fair	Fair	Infill +	Infill +	2	2
American elm	Ulmus americana	WDH	Medium	23.6	48.0	8.5	No change	Sm. inc.	Medium	Rare	Poor	Fair	Infill +	Infill +	2	3
green ash	Fraxinus pennsylvanica	WSH	Low	21.9	42.1	7.6	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	2	4
hackberry	Celtis occidentalis	WDH	Medium	15.8	31.4	3.2	Lg. inc.	Lg. inc.	High	Rare	Good	Good			2	5
honeylocust	Gleditsia triacanthos	NSH	Low	23.7	24.8	11.0	Sm. inc.	Sm. inc.	High	Rare	Good	Good			2	6
eastern redcedar	Juniperus virginiana	WDH	Medium	19.4	19.3	8.9	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			2	7
eastern cottonwood	Populus deltoides	NSH	Low	6.4	18.4	12.9	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	2	8
Siberian elm	Ulmus pumila	NDH	FIA	4.4	16.2	17.0	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	9
black willow	Salix nigra	NSH	Low	1.6	8.8	12.9	Sm. dec.	No change	Low	Rare	Very Poor	Very Poor			2	10
black walnut	Juglans nigra	WDH	Low	1.7	3.8	5.7	Sm. inc.	Sm. inc.	Medium	Rare	Fair	Fair	Infill +	Infill +	2	11
slippery elm	Ulmus rubra	WSL	Low	5.2	3.5	3.9	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	2	12
peachleaf willow	Salix amygdaloides	NSLX	FIA	0.1	3.3	0.3	Unknown	Unknown	Medium	Rare	FIA Only	FIA Only			0	13
silver maple	Acer saccharinum	NSH	Low	2.4	2.7	5.6	Sm. dec.	Sm. dec.	High	Rare	Poor	Poor			0	14
boxelder	Acer negundo	WSH	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat		Migrate ++	3	15
serviceberry	Amelanchier spp.	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	16
cittamwood/gum bumelia	Sideroxylon lanuginosum ssp.	NSL	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat		Migrate +	3	17
pecan	Carya illinoensis	NSH	Low	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat		Migrate ++	3	18
sugarberry	Celtis laevigata	NDH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	19
Osage-orange	Maclura pomifera	NDH	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Migrate ++	Migrate ++	3	20
pin cherry	Prunus pensylvanica	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	21
blackjack oak	Quercus marilandica	NSL	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat		Migrate +	3	22
post oak	Quercus stellata	WDH	High	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Migrate +	Migrate ++	3	23
live oak	Quercus virginiana	NDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			0	24
black locust	Robinia pseudoacacia	NDH	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Likely +	Likely +	3	25
cedar elm	Ulmus crassifolia	NDH	Medium	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat			0	26