

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 4

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	Low	Scenario RCP45	Scenario RCP85	Scenario RCP45	Scenario RCP85	SHIFT RCP45	SHIFT RCP85
Ash	1			0	5	Increase	0	1	Very Good	0	0
Hickory	0			6	6	No Change	1	1	Good	0	1
Maple	1	Abundant	0	6	1	Decrease	5	4	Fair	1	0
Oak	0	Common	1	6	1	New	5	5	Poor	3	4
Pine	1	Rare	5	0		Unknown	1	1	Very Poor	1	0
Other	3	Absent	6	12	12		12	12	FIA Only	0	0
	6		12						Unknown	1	1
										6	6

Potential Changes in Climate Variables

Temperature (°F)

Scenario	2009	2039	2069	2099	
Annual	44.4	46.3	49.0	49.7	
Average	44.4	47.1	50.0	53.4	
GFDL45	44.4	50.6	49.2	50.6	
GFDL85	44.4	47.3	50.5	55.1	
HAD45	44.4	47.5	51.5	53.0	
HAD85	44.4	48.1	53.2	57.8	
Growing Season	65.3	67.5	70.1	70.8	
May—Sep	65.3	73.1	71.3	73.1	
GFDL45	65.3	68.8	72.5	78.1	
GFDL85	65.3	68.0	71.1	72.9	
HAD45	65.3	68.3	72.5	77.1	
HAD85	65.3	68.3	72.5	77.1	
Coldest Month	11.6	14.0	15.8	16.6	
Average	11.6	13.1	15.1	17.3	
GFDL45	11.6	15.4	16.2	16.7	
GFDL85	11.6	15.0	16.6	19.0	
HAD45	11.6	14.4	18.2	17.8	
HAD85	11.6	17.5	22.4	25.0	
Warmest Month	72.3	75.1	76.7	77.5	
Average	72.3	76.6	78.4	81.2	
GFDL45	72.3	75.9	77.4	78.6	
GFDL85	72.3	76.4	78.1	81.8	
HAD45	72.3	75.2	76.9	78.1	
HAD85	72.3	76.0	78.4	81.6	

Precipitation (in)

Scenario	2009	2039	2069	2099	
Annual	24.1	24.4	24.3	23.6	
Total	24.1	24.1	23.7	24.5	
GFDL45	24.1	27.6	30.0	28.1	
GFDL85	24.1	27.8	30.7	30.1	
HAD45	24.1	26.9	25.3	26.2	
HAD85	24.1	25.7	26.5	28.5	
Growing Season	15.8	15.2	14.8	14.1	
May—Sep	15.8	18.3	19.8	17.8	
GFDL45	15.8	18.3	19.4	18.2	
GFDL85	15.8	16.3	15.2	15.1	
HAD45	15.8	15.5	14.9	14.0	
HAD85	15.8	15.5	14.9	14.0	

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
green ash	Fraxinus pennsylvanica	WSH	Low	20.7	82.8	53.5	Lg. dec.	Lg. dec.	Medium	Common	Poor	Poor			2	1
boxelder	Acer negundo	WSH	Low	8.7	41.5	29.4	Lg. dec.	Lg. dec.	High	Rare	Poor	Poor			0	2
red pine	Pinus resinosa	NSH	Medium	0.4	28.3	9.0	Very Lg. dec.	Very Lg. dec.	Low	Rare	Lost	Lost			0	3
American elm	Ulmus americana	WDH	Medium	9.1	23.2	41.1	Sm. dec.	No change	Medium	Rare	Very Poor	Poor			2	4
honeylocust	Gleditsia triacanthos	NSH	Low	0.6	14.1	6.5	Sm. dec.	Sm. dec.	High	Rare	Poor	Poor			0	5
hackberry	Celtis occidentalis	WDH	Medium	4.5	3.7	13.1	No change	Sm. inc.	High	Rare	Fair	Good			0	6
eastern redcedar	Juniperus virginiana	WDH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	7
mountain maple	Acer spicatum	NSL	Low	0	0	0	Unknown	Unknown	High	Absent	Unknown	Unknown			0	8
red mulberry	Morus rubra	NSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	9
eastern cottonwood	Populus deltoides	NSH	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			0	10
bur oak	Quercus macrocarpa	NDH	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Migrate ++	Migrate +	3	11
American basswood	Tilia americana	WSL	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	12