

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
 8,532.9 3,294.6 8

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

Potential Changes in Climate Variables

Temperature (°F)

Scenario	2009	2039	2069	2099		
Annual	CCSM45	42.3	44.0	46.8	47.4	
Average	CCSM85	42.3	44.8	48.2	51.7	
	GFDL45	42.3	48.6	47.0	48.6	
	GFDL85	42.3	45.1	48.4	53.3	
	HAD45	42.3	45.6	49.6	51.3	
	HAD85	42.3	46.1	51.1	56.4	
Growing Season	CCSM45	64.2	66.3	68.7	69.4	
	CCSM85	64.2	67.1	70.2	74.4	
May—Sep	GFDL45	64.2	72.0	70.0	72.0	
	GFDL85	64.2	67.6	71.2	76.9	
	HAD45	64.2	67.3	70.2	72.4	
	HAD85	64.2	67.2	71.4	76.7	
Coldest Month	CCSM45	7.3	8.9	11.3	11.5	
	CCSM85	7.3	8.5	10.9	13.4	
Average	GFDL45	7.3	11.0	12.1	12.7	
	GFDL85	7.3	11.3	12.9	15.8	
	HAD45	7.3	10.4	14.2	13.9	
	HAD85	7.3	13.2	17.9	20.9	
Warmest Month	CCSM45	71.2	73.9	75.4	76.1	
	CCSM85	71.2	75.1	77.2	79.8	
Average	GFDL45	71.2	74.7	76.2	77.6	
	GFDL85	71.2	75.1	77.0	80.5	
	HAD45	71.2	74.6	76.1	77.9	
	HAD85	71.2	74.7	77.1	80.7	

Precipitation (in)

Scenario	2009	2039	2069	2099		
Annual	CCSM45	21.6	22.1	22.3	21.5	
Total	CCSM85	21.6	21.7	21.2	21.6	
	GFDL45	21.6	24.7	27.0	24.7	
	GFDL85	21.6	25.2	27.3	26.7	
	HAD45	21.6	22.8	21.9	22.8	
	HAD85	21.6	23.2	22.3	24.5	
Growing Season	CCSM45	14.5	14.2	14.1	13.8	
	CCSM85	14.5	13.7	13.4	12.7	
May—Sep	GFDL45	14.5	16.8	18.4	16.2	
	GFDL85	14.5	16.7	17.9	16.9	
	HAD45	14.5	14.4	13.8	13.3	
	HAD85	14.5	14.5	12.9	12.6	

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	82.8	20.7	Lg. dec.	Sm. dec.	Medium	Common	Poor	Poor	Infill +	Infill +	2	1
boxelder	Acer negundo	WSH	Low	13.8	39.9	11.4	No change	No change	High	Rare	Fair	Fair	Infill +	Infill +	2	2
bur oak	Quercus macrocarpa	NDH	Medium	12.8	20.2	21.6	Lg. inc.	Lg. inc.	High	Rare	Good	Good			2	3
eastern cottonwood	Populus deltoides	NSH	Low	7.4	18.3	24.6	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	2	4
Siberian elm	Ulmus pumila	NDH	FIA	7.4	15.0	11.3	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	5
American elm	Ulmus americana	WDH	Medium	15.2	13.7	8.7	Sm. inc.	Lg. inc.	Medium	Rare	Fair	Good	Infill +		2	6
American basswood	Tilia americana	WSL	Medium	8.1	8.0	12.3	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	2	7
slippery elm	Ulmus rubra	WSL	Low	3.8	2.9	8.0	Sm. dec.	No change	Medium	Rare	Very Poor	Poor		Infill +	2	8
eastern redcedar	Juniperus virginiana	WDH	Medium	2.4	1.4	2.5	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			2	9
chokecherry	Prunus virginiana	NSLX	FIA	3.8	0.8	2.3	Unknown	Unknown	Medium	Rare	FIA Only	FIA Only			0	10
ashe juniper	Juniperus ashei	NDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			0	11
red pine	Pinus resinosa	NSH	Medium	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat	Migrate +		3	12
silver maple	Acer saccharinum	NSH	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat		Migrate +	3	13
mountain maple	Acer spicatum	NSL	Low	0	0	0	Unknown	Unknown	High	Absent	Unknown	Unknown			0	14
hackberry	Celtis occidentalis	WDH	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat			3	15
flowering dogwood	Cornus florida	WDH	Medium	0	0	0	Unknown	Unknown	Medium	Modeled	Unknown	Unknown			0	16
honeylocust	Gleditsia triacanthos	NSH	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat			3	17
eastern hophornbeam; ironw	Ostrya virginiana	WSL	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat			3	18
quaking aspen	Populus tremuloides	WDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate ++	Migrate ++	3	19
pin cherry	Prunus pensylvanica	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	20
northern pin oak	Quercus ellipsoidalis	NSH	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Migrate +		3	21
post oak	Quercus stellata	WDH	High	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat			0	22
black oak	Quercus velutina	WDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			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			3	25
cedar elm	Ulmus crassifolia	NDH	Medium	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat			0	26