

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
 8,376.7 3,234.3 3

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				Increase	0	1	Very Good	0	0	Likely	1	1		
Hickory	0				No Change	1	0	Good	0	1	Infill	1	0		
Maple	1	Abundant	0	High	5	6	Decrease	3	3	Fair	1	0	Migrate	0	1
Oak	1	Common	0	Medium	9	11	New	12	12	Poor	1	1		2	2
Pine	0	Rare	5	Low	4	1	Unknown	3	3	Very Poor	2	2			
Other	2	Absent	12	FIA	1					FIA Only	0	0			
	5		17		19	18		19	19	19				6	6

Potential Changes in Climate Variables

Temperature (°F)

Scenario	2009	2039	2069	2099	
Annual	40.7	42.4	44.9	45.7	
Average	40.7	43.0	46.5	49.9	
GFDL45	40.7	46.9	45.3	46.9	
GFDL85	40.7	43.4	46.8	51.7	
HAD45	40.7	44.3	48.1	50.0	
HAD85	40.7	44.6	49.7	55.1	
Growing Season	62.5	64.8	67.1	67.8	
May—Sep	62.5	70.3	68.3	70.3	
GFDL45	62.5	65.9	69.5	75.3	
HAD45	62.5	65.8	68.6	71.0	
HAD85	62.5	65.6	69.9	75.4	
Coldest Month	6.4	7.6	9.9	9.8	
Average	6.4	7.1	9.2	11.9	
GFDL45	6.4	9.4	10.5	11.0	
GFDL85	6.4	10.0	11.6	14.4	
HAD45	6.4	9.5	13.3	13.0	
HAD85	6.4	12.4	17.3	19.7	
Warmest Month	69.7	72.7	74.1	74.7	
Average	69.7	73.4	75.5	78.0	
GFDL45	69.7	73.6	75.1	76.4	
GFDL85	69.7	73.6	75.7	79.3	
HAD45	69.7	73.8	75.1	77.1	
HAD85	69.7	73.2	75.9	79.4	

Precipitation (in)

Scenario	2009	2039	2069	2099	
Annual	18.4	17.4	18.1	17.5	
Total	18.4	18.2	18.6	18.4	
GFDL45	18.4	20.5	22.8	21.5	
GFDL85	18.4	21.3	23.6	22.8	
HAD45	18.4	19.0	18.2	18.6	
HAD85	18.4	18.7	18.5	20.6	
Growing Season	13.2	11.8	12.3	11.8	
May—Sep	13.2	14.7	16.3	14.8	
GFDL45	13.2	14.7	16.2	15.0	
HAD45	13.2	12.8	11.8	11.6	
HAD85	13.2	12.4	11.7	11.3	

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	10.2	42.6	34.9	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			2	1
boxelder	Acer negundo	WSH	Low	7.1	42.1	24.7	Lg. dec.	Lg. dec.	High	Rare	Poor	Poor	Infill +		2	2
eastern cottonwood	Populus deltoides	NSH	Low	3.4	40.3	28.8	Lg. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			2	3
bur oak	Quercus macrocarpa	NDH	Medium	4.1	12.8	36.5	No change	Sm. inc.	High	Rare	Fair	Good			2	4
Siberian elm	Ulmus pumila	NDH	FIA	1.3	3.1	2.9	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	5
ashe juniper	Juniperus ashei	NDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			0	6
eastern redcedar	Juniperus virginiana	WDH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			0	7
red pine	Pinus resinosa	NSH	Medium	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat			3	8
striped maple	Acer pensylvanicum	NSL	Medium	0	0	0	Unknown	Unknown	Medium	Modeled	Unknown	Unknown			0	9
black hickory	Carya texana	NDL	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			0	10
hackberry	Celtis occidentalis	WDH	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat			0	11
flowering dogwood	Cornus florida	WDL	Medium	0	0	0	Unknown	Unknown	Medium	Modeled	Unknown	Unknown			0	12
honeylocust	Gleditsia triacanthos	NSH	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat			0	13
quaking aspen	Populus tremuloides	WDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Likely +	Likely +	3	14
northern pin oak	Quercus ellipsoidalis	NSH	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat			3	15
post oak	Quercus stellata	WDH	High	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat			0	16
live oak	Quercus virginiana	NDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			0	17
American basswood	Tilia americana	WSL	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +		3	18
American elm	Ulmus americana	WDH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	19