

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

	sq. km	sq. mi	FIA Plots
Area of Region	8,532.9	3,294.6	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											
Hickory	0											
Maple	1	Abundant	0	High	1	5	Increase	3	3	Very Good	0	0
Oak	1	Common	0	Medium	5	6	No Change	2	2	Good	2	2
Pine	1	Rare	9	Low	5	0	Decrease	2	2	Fair	2	1
Other	5	Absent	4	FIA	2		New	3	3	Poor	1	3
	9		13		13	11	Unknown	3	3	Very Poor	2	1
								13	13	FIA Only	0	0
										Unknown	1	1
											8	8

Potential Changes in Climate Variables

Temperature (°F)

	Scenario	2009	2039	2069	2099	
Annual Average	CCSM45	42.1	43.8	46.5	47.2	
	CCSM85	42.1	44.5	47.9	51.4	
	GFDL45	42.1	48.3	46.7	48.3	
	GFDL85	42.1	44.9	48.1	53.0	
	HAD45	42.1	45.5	49.4	51.2	
	HAD85	42.1	45.9	51.0	56.2	
Growing Season (May—Sep)	CCSM45	63.7	65.8	68.3	68.9	
	CCSM85	63.7	66.6	69.7	73.9	
	GFDL45	63.7	71.4	69.4	71.4	
	GFDL85	63.7	67.0	70.6	76.4	
	HAD45	63.7	66.8	69.6	71.8	
	HAD85	63.7	66.6	70.9	76.2	
Coldest Month Average	CCSM45	8.2	9.6	12.0	12.1	
	CCSM85	8.2	9.2	11.5	13.9	
	GFDL45	8.2	11.7	12.7	13.2	
	GFDL85	8.2	11.9	13.6	16.2	
	HAD45	8.2	11.4	15.2	14.7	
	HAD85	8.2	14.2	19.2	21.6	
Warmest Month Average	CCSM45	70.9	73.7	75.1	75.9	
	CCSM85	70.9	74.7	76.9	79.5	
	GFDL45	70.9	74.5	76.1	77.3	
	GFDL85	70.9	74.8	76.8	80.4	
	HAD45	70.9	74.5	75.9	77.6	
	HAD85	70.9	74.3	76.8	80.4	

Precipitation (in)

	Scenario	2009	2039	2069	2099	
Annual Total	CCSM45	20.4	20.6	20.8	19.9	
	CCSM85	20.4	20.5	19.9	20.3	
	GFDL45	20.4	23.4	26.0	24.0	
	GFDL85	20.4	23.9	26.3	25.6	
	HAD45	20.4	21.5	20.9	21.5	
	HAD85	20.4	22.1	21.4	23.6	
Growing Season (May—Sep)	CCSM45	14.0	13.3	13.4	12.7	
	CCSM85	14.0	13.1	12.8	12.0	
	GFDL45	14.0	16.2	17.9	16.0	
	GFDL85	14.0	16.0	17.5	16.4	
	HAD45	14.0	13.7	13.1	12.6	
	HAD85	14.0	14.0	12.6	12.1	

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
American elm	Ulmus americana	WDH	Medium	10.5	20.9	22.6	Lg. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			2	1
green ash	Fraxinus pennsylvanica	WSH	Low	10.5	12.1	11.0	Sm. inc.	Sm. inc.	Medium	Rare	Fair	Fair	Infill +	Infill +	2	2
Siberian elm	Ulmus pumila	NDH	FIA	4.7	10.5	35.8	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	3
boxelder	Acer negundo	WSH	Low	5.8	10.4	6.6	No change	Sm. dec.	High	Rare	Fair	Poor	Infill +		2	4
Scots pine	Pinus sylvestris	NSH	FIA	4.7	10.1	34.5	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	5
eastern cottonwood	Populus deltoides	NSH	Low	1.2	9.0	7.5	Sm. dec.	No change	Medium	Rare	Very Poor	Poor			2	6
bur oak	Quercus macrocarpa	NDH	Medium	1.2	4.6	3.8	Lg. inc.	Lg. inc.	High	Rare	Good	Good			2	7
American basswood	Tilia americana	WSL	Medium	1.2	2.6	2.2	No change	No change	Medium	Rare	Poor	Poor			2	8
eastern redcedar	Juniperus virginiana	WDH	Medium	4.7	2.5	8.4	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			2	9
ashe juniper	Juniperus ashei	NDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			0	10
mountain maple	Acer spicatum	NSL	Low	0	0	0	Unknown	Unknown	High	Absent	Unknown	Unknown			0	11
hackberry	Celtis occidentalis	WDH	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Migrate +		3	12
honeylocust	Gleditsia triacanthos	NSH	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat			3	13