

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	8,985.5	3,469.3	2

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

Potential Changes in Climate Variables

Temperature (°F)

	Scenario	2009	2039	2069	2099	
Annual Average	CCSM45	47.0	48.9	51.4	52.1	
	CCSM85	47.0	49.6	52.2	55.7	
	GFDL45	47.0	53.1	51.7	53.1	
	GFDL85	47.0	49.8	53.0	57.5	
	HAD45	47.0	50.0	53.9	55.2	
	HAD85	47.0	50.6	55.6	59.9	
Growing Season (May—Sep)	CCSM45	67.4	69.5	72.2	72.8	
	CCSM85	67.4	70.3	72.9	77.1	
	GFDL45	67.4	75.2	73.3	75.2	
	GFDL85	67.4	70.9	74.5	80.1	
	HAD45	67.4	69.8	73.0	74.5	
	HAD85	67.4	70.4	74.7	78.8	
Coldest Month Average	CCSM45	15.2	17.9	19.3	20.3	
	CCSM85	15.2	17.2	18.9	21.0	
	GFDL45	15.2	19.0	19.8	20.1	
	GFDL85	15.2	18.5	20.1	22.2	
	HAD45	15.2	17.9	21.6	21.2	
	HAD85	15.2	21.0	25.7	28.1	
Warmest Month Average	CCSM45	74.2	76.9	78.6	79.4	
	CCSM85	74.2	78.4	80.0	83.0	
	GFDL45	74.2	77.8	79.2	80.4	
	GFDL85	74.2	78.4	79.9	83.6	
	HAD45	74.2	76.5	78.5	79.4	
	HAD85	74.2	78.0	80.4	83.2	

Precipitation (in)

	Scenario	2009	2039	2069	2099	
Annual Total	CCSM45	25.4	25.8	25.0	25.1	
	CCSM85	25.4	25.5	26.0	26.3	
	GFDL45	25.4	28.8	31.6	30.4	
	GFDL85	25.4	29.0	32.1	31.7	
	HAD45	25.4	29.0	27.1	28.0	
	HAD85	25.4	26.8	28.2	30.5	
Growing Season (May—Sep)	CCSM45	16.1	15.5	14.5	14.3	
	CCSM85	16.1	14.8	15.0	14.4	
	GFDL45	16.1	18.5	20.1	18.5	
	GFDL85	16.1	18.7	19.7	18.6	
	HAD45	16.1	17.3	15.7	15.9	
	HAD85	16.1	15.6	15.5	14.7	

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
Siberian elm	Ulmus pumila	NDH	FIA	8.5	56.1	47.8	Unknown	Unknown	NA	Common	NNIS	NNIS			0	1
green ash	Fraxinus pennsylvanica	WSH	Low	4.2	30.4	5.1	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	2	2
red pine	Pinus resinosa	NSH	Medium	2.3	27.8	52.2	Very Lg. dec.	Very Lg. dec.	Low	Rare	Lost	Lost			0	3
boxelder	Acer negundo	WSH	Low	0.9	19.1	4.4	Sm. dec.	Sm. dec.	High	Rare	Poor	Poor			0	4
silver maple	Acer saccharinum	NSH	Low	2	15.5	24.6	Sm. dec.	Lg. dec.	High	Rare	Poor	Poor			0	5
honeylocust	Gleditsia triacanthos	NSH	Low	0.7	13.9	8.2	Sm. dec.	Sm. dec.	High	Rare	Poor	Poor			0	6
Scots pine	Pinus sylvestris	NSH	FIA	0.9	5.0	3.5	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	7
eastern redcedar	Juniperus virginiana	WDH	Medium	3	3.6	2.3	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			2	8
chokecherry	Prunus virginiana	NSLX	FIA	4.5	2.0	7.3	Unknown	Unknown	Medium	Rare	FIA Only	FIA Only			0	9
serviceberry	Amelanchier spp.	NSL	Low	0	0	0	Unknown	Unknown	Medium	Modeled	Unknown	Unknown			0	10
hackberry	Celtis occidentalis	WDH	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Migrate +	Migrate ++	3	11
red mulberry	Morus rubra	NSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Likely +	Likely +	3	12
eastern cottonwood	Populus deltoides	NSH	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate ++	Migrate ++	3	13
bur oak	Quercus macrocarpa	NDH	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Migrate ++	Migrate ++	3	14
American elm	Ulmus americana	WDH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +	Migrate ++	3	15