

**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    8,376.7    3,234.3      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	
		Abundant	Rare	Reliability	Adaptability	Scenario RCP45	Scenario RCP85	Scenario RCP45	Scenario RCP85	SHIFT RCP45	SHIFT RCP85
Ash	1			High	4	Increase	1	1	Very Good	0	0
Hickory	0			Medium	8	No Change	0	1	Good	0	2
Maple	1	Abundant	0	Low	1	Decrease	4	3	Fair	3	1
Oak	1	Common	3	FIA	2	New	5	5	Poor	1	1
Pine	0	Rare	4			Unknown	4	4	Very Poor	1	1
Other	4	Absent	6						FIA Only	1	1
	<b>7</b>		<b>13</b>				<b>14</b>	<b>14</b>	Unknown	2	2
										<b>8</b>	<b>8</b>

**Potential Changes in Climate Variables**

**Temperature (°F)**

Scenario	2009	2039	2069	2099		
Annual	CCSM45	40.5	42.2	44.8	45.6	
Average	CCSM85	40.5	42.9	46.3	49.9	
	GFDL45	40.5	46.8	45.2	46.8	
	GFDL85	40.5	43.3	46.7	51.6	
	HAD45	40.5	44.0	47.9	49.8	
	HAD85	40.5	44.4	49.4	55.0	
Growing Season	CCSM45	62.6	64.7	67.1	67.8	
	CCSM85	62.6	65.5	68.6	72.6	
May—Sep	GFDL45	62.6	70.4	68.4	70.4	
	GFDL85	62.6	66.0	69.6	75.4	
	HAD45	62.6	65.9	68.7	71.0	
	HAD85	62.6	65.7	69.8	75.4	
Coldest Month	CCSM45	5.5	6.8	9.2	9.2	
	CCSM85	5.5	6.4	8.7	11.4	
Average	GFDL45	5.5	8.8	9.8	10.4	
	GFDL85	5.5	9.3	11.0	13.8	
	HAD45	5.5	8.5	12.4	12.1	
	HAD85	5.5	11.3	15.9	18.9	
Warmest Month	CCSM45	69.6	72.4	73.9	74.4	
	CCSM85	69.6	73.2	75.5	77.8	
Average	GFDL45	69.6	73.4	74.9	76.2	
	GFDL85	69.6	73.6	75.6	79.1	
	HAD45	69.6	73.5	74.8	76.8	
	HAD85	69.6	73.2	75.7	79.2	

**Precipitation (in)**

Scenario	2009	2039	2069	2099		
Annual	CCSM45	19.5	18.9	19.5	18.7	
Total	CCSM85	19.5	19.3	19.5	19.2	
	GFDL45	19.5	21.9	24.3	22.8	
	GFDL85	19.5	22.7	24.8	24.2	
	HAD45	19.5	20.0	19.2	19.9	
	HAD85	19.5	20.0	19.6	21.7	
Growing Season	CCSM45	13.8	12.9	13.2	12.6	
	CCSM85	13.8	13.1	13.3	12.3	
May—Sep	GFDL45	13.8	15.7	17.3	15.7	
	GFDL85	13.8	15.6	17.1	16.0	
	HAD45	13.8	13.5	12.5	12.3	
	HAD85	13.8	13.1	12.1	11.9	

**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
boxelder	Acer negundo	WSH	Low	26.4	70.8	38.1	Lg. dec.	Lg. dec.	High	Common	Fair	Fair	Infill +	Infill +	2	1
bur oak	Quercus macrocarpa	NDH	Medium	18.8	51.7	27.0	Sm. dec.	No change	High	Common	Fair	Good	Infill +		2	2
green ash	Fraxinus pennsylvanica	WSH	Low	22.3	51.1	17.9	Lg. dec.	Lg. dec.	Medium	Common	Poor	Poor		Infill +	2	3
quaking aspen	Populus tremuloides	WDH	High	4	8.0	22.6	Sm. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	4
wild plum	Prunus americana	NSLX	FIA	4	4.0	11.3	Unknown	Unknown	Medium	Rare	FIA Only	FIA Only			0	5
Siberian elm	Ulmus pumila	NDH	FIA	3.4	3.1	7.6	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	6
American elm	Ulmus americana	WDH	Medium	4	0.5	1.3	Sm. inc.	Lg. inc.	Medium	Rare	Fair	Good			2	7
eastern redcedar	Juniperus virginiana	WDH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate ++	3	8
serviceberry	Amelanchier spp.	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	9
hackberry	Celtis occidentalis	WDH	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat			3	10
honeylocust	Gleditsia triacanthos	NSH	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat			0	11
eastern cottonwood	Populus deltoides	NSH	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate +	3	12
black cherry	Prunus serotina	WDL	Medium	0	0	0	Unknown	Unknown	Low	Modeled	Unknown	Unknown			0	13
American basswood	Tilia americana	WSL	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate +	3	14