

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	9,273.2	3,580.4	15

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	3	10	Increase	2	2	Very Good	0	0	Likely	1	1
Hickory	0			Medium	8	13	No Change	5	4	Good	1	1	Infill	6	5
Maple	2	Abundant	0	Low	12	2	Decrease	6	7	Fair	4	4	Migrate	2	5
Oak	1	Common	1	FIA	3		New	8	8	Poor	6	5		9	11
Pine	1	Rare	15				Unknown	5	5	Very Poor	2	3			
Other	11	Absent	8							FIA Only	2	2			
	16		24		26	25		26	26	Unknown	2	2			
											17	17			

Potential Changes in Climate Variables

Temperature (°F)

	Scenario	2009	2039	2069	2099	
Annual Average	CCSM45	49.3	51.0	53.1	53.9	
	CCSM85	49.3	51.6	54.0	57.1	
	GFDL45	49.3	55.2	53.8	55.2	
	GFDL85	49.3	51.9	55.0	59.4	
	HAD45	49.3	52.0	55.6	56.5	
	HAD85	49.3	52.6	57.5	61.0	
Growing Season (May—Sep)	CCSM45	67.9	70.0	72.4	73.2	
	CCSM85	67.9	70.7	73.1	77.0	
	GFDL45	67.9	76.0	73.8	76.0	
	GFDL85	67.9	71.5	75.1	80.5	
	HAD45	67.9	70.3	73.2	74.2	
	HAD85	67.9	70.9	75.6	78.9	
Coldest Month (Average)	CCSM45	21.1	23.3	24.3	25.5	
	CCSM85	21.1	23.5	24.5	26.4	
	GFDL45	21.1	24.3	24.5	25.0	
	GFDL85	21.1	23.5	25.0	26.4	
	HAD45	21.1	23.6	27.0	26.4	
	HAD85	21.1	26.8	30.5	32.4	
Warmest Month (Average)	CCSM45	74.7	77.2	79.0	79.8	
	CCSM85	74.7	78.7	80.2	82.9	
	GFDL45	74.7	78.4	79.7	81.1	
	GFDL85	74.7	79.3	80.7	84.4	
	HAD45	74.7	77.0	78.9	79.5	
	HAD85	74.7	78.4	81.0	83.1	

Precipitation (in)

	Scenario	2009	2039	2069	2099	
Annual Total	CCSM45	26.5	28.3	27.1	26.7	
	CCSM85	26.5	27.4	27.9	27.7	
	GFDL45	26.5	29.8	32.4	31.0	
	GFDL85	26.5	29.8	32.9	31.3	
	HAD45	26.5	30.1	28.9	30.0	
	HAD85	26.5	28.4	28.6	30.5	
Growing Season (May—Sep)	CCSM45	17.1	17.5	16.0	16.0	
	CCSM85	17.1	16.3	16.4	15.8	
	GFDL45	17.1	19.6	21.1	19.1	
	GFDL85	17.1	19.3	21.0	19.2	
	HAD45	17.1	18.6	17.9	18.2	
	HAD85	17.1	17.6	16.7	15.8	

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
eastern redcedar	Juniperus virginiana	WDH	Medium	37.1	125.1	33.0	Sm. dec.	No change	Medium	Common	Poor	Fair	Infill +	Infill +	2	1
green ash	Fraxinus pennsylvanica	WSH	Low	21.4	47.8	23.2	No change	Sm. dec.	Medium	Rare	Poor	Very Poor	Infill +		2	2
red mulberry	Morus rubra	NSL	Low	18.1	44.9	21.6	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			2	3
eastern cottonwood	Populus deltoides	NSH	Low	13.1	35.1	9.6	Sm. inc.	Sm. inc.	Medium	Rare	Fair	Fair	Infill +	Infill +	2	4
Siberian elm	Ulmus pumila	NDH	FIA	18	34.0	23.0	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	5
boxelder	Acer negundo	WSH	Low	13	32.6	18.7	Lg. dec.	Lg. dec.	High	Rare	Poor	Poor	Infill +	Infill +	2	6
black willow	Salix nigra	NSH	Low	5.7	26.4	42.5	Lg. dec.	Sm. dec.	Low	Rare	Very Poor	Very Poor			2	7
peachleaf willow	Salix amygdaloides	NSLX	FIA	11.4	22.0	25.2	Unknown	Unknown	Medium	Rare	FIA Only	FIA Only			0	8
hackberry	Celtis occidentalis	WDH	Medium	9.1	19.2	12.8	No change	No change	High	Rare	Fair	Fair	Infill +	Infill +	2	9
bur oak	Quercus macrocarpa	NDH	Medium	5	13.9	19.5	No change	No change	High	Rare	Fair	Fair	Infill +	Infill +	2	10
American elm	Ulmus americana	WDH	Medium	14.9	12.1	4.1	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			2	11
honeylocust	Gleditsia triacanthos	NSH	Low	1.9	9.5	4.5	No change	Sm. dec.	High	Rare	Fair	Poor			0	12
silver maple	Acer saccharinum	NSH	Low	0.7	3.4	2.1	Sm. dec.	Sm. dec.	High	Rare	Poor	Poor			0	13
jack pine	Pinus banksiana	NSH	Medium	2.2	1.4	2.6	Sm. dec.	Sm. dec.	High	Rare	Poor	Poor			0	14
northern catalpa	Catalpa speciosa	NSHX	FIA	0.7	1.1	0.7	Unknown	Unknown	Medium	Rare	FIA Only	FIA Only			0	15
slippery elm	Ulmus rubra	WSL	Low	0.7	0.3	0.2	No change	No change	Medium	Rare	Poor	Poor			0	16
shortleaf pine	Pinus echinata	WDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			0	17
red maple	Acer rubrum	WDH	High	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat			3	18
serviceberry	Amelanchier spp.	NSL	Low	0	0	0	Unknown	Unknown	Medium	Modeled	Unknown	Unknown			0	19
eastern redbud	Cercis canadensis	NSL	Low	0	0	0	Unknown	Unknown	Medium	Modeled	Unknown	Unknown			0	20
black walnut	Juglans nigra	WDH	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Likely +	Likely +	3	21
Osage-orange	Maclura pomifera	NDH	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	22
black cherry	Prunus serotina	WDL	Medium	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat			3	23
blackjack oak	Quercus marilandica	NSL	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat			3	24
post oak	Quercus stellata	WDH	High	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Migrate +	Migrate ++	3	25
black locust	Robinia pseudoacacia	NDH	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	26