

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	8,214.0	3,171.5	7

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	Scenario	Scenario	Scenario	SHIFT	SHIFT		
				High	6	Increase	RCP45	RCP85	RCP45	RCP85	RCP45	RCP85	
Ash	1			5	6	0	0	0	0	Likely	1	1	
Hickory	0			7	14	No Change	4	4	0	0	Infill	4	4
Maple	1	Abundant	0	Low	2	Decrease	7	7	3	3	Migrate	1	1
Oak	1	Common	1	FIA	2	New	8	8	2	2		6	6
Pine	0	Rare	12			Unknown	3	3	6	6			
Other	10	Absent	9				22	22	2	2			
	13		22						1	1			
									14	14			

Potential Changes in Climate Variables

Temperature (°F)

Scenario	2009	2039	2069	2099		
Annual	CCSM45	38.2	39.9	42.4	43.1	
Average	CCSM85	38.2	40.5	44.0	47.6	
	GFDL45	38.2	44.6	43.0	44.6	
	GFDL85	38.2	40.9	44.5	49.5	
	HAD45	38.2	41.7	45.5	47.6	
	HAD85	38.2	42.1	47.0	53.0	
Growing Season	CCSM45	60.7	62.8	65.1	65.7	
	CCSM85	60.7	63.6	66.7	70.6	
May—Sep	GFDL45	60.7	68.6	66.8	68.6	
	GFDL85	60.7	64.2	67.9	73.6	
	HAD45	60.7	63.9	66.8	69.3	
	HAD85	60.7	63.8	67.9	73.8	
Coldest Month	CCSM45	2.3	4.1	6.3	6.3	
	CCSM85	2.3	3.3	5.9	8.4	
Average	GFDL45	2.3	5.7	6.8	7.5	
	GFDL85	2.3	6.2	7.9	11.0	
	HAD45	2.3	5.4	9.2	9.0	
	HAD85	2.3	8.0	12.4	15.8	
Warmest Month	CCSM45	67.6	70.4	71.7	72.1	
	CCSM85	67.6	71.0	73.2	75.4	
Average	GFDL45	67.6	71.5	73.0	74.3	
	GFDL85	67.6	71.5	73.6	77.1	
	HAD45	67.6	71.5	72.9	75.0	
	HAD85	67.6	71.2	73.7	77.5	

Precipitation (in)

Scenario	2009	2039	2069	2099		
Annual	CCSM45	19.1	18.2	18.9	18.2	
Total	CCSM85	19.1	18.6	18.8	18.5	
	GFDL45	19.1	21.0	22.9	22.5	
	GFDL85	19.1	22.2	23.7	23.6	
	HAD45	19.1	19.7	18.2	19.0	
	HAD85	19.1	18.9	19.0	20.0	
Growing Season	CCSM45	13.7	12.8	13.4	12.4	
	CCSM85	13.7	12.9	12.9	12.3	
May—Sep	GFDL45	13.7	15.3	16.5	15.7	
	GFDL85	13.7	15.5	16.6	15.7	
	HAD45	13.7	13.6	11.9	12.0	
	HAD85	13.7	12.7	11.8	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
bur oak	Quercus macrocarpa	NDH	Medium	15.1	86.6	24.0	Lg. dec.	Sm. dec.	High	Common	Fair	Fair		Infill +	2	1
green ash	Fraxinus pennsylvanica	WSH	Low	14.8	33.6	11.6	Lg. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			2	2
boxelder	Acer negundo	WSH	Low	6.3	26.5	1.6	No change	No change	High	Rare	Fair	Fair	Infill +		2	3
quaking aspen	Populus tremuloides	WDH	High	4.8	24.8	9.0	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			2	4
chokecherry	Prunus virginiana	NSLX	FIA	9.8	6.7	3.7	Unknown	Unknown	Medium	Rare	FIA Only	FIA Only			0	5
white spruce	Picea glauca	NSL	Medium	0.3	5.5	1.1	Sm. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			2	6
American elm	Ulmus americana	WDH	Medium	3.9	5.0	2.1	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	2	7
American basswood	Tilia americana	WSL	Medium	1.2	4.7	3.7	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	2	8
wild plum	Prunus americana	NSLX	FIA	0.7	4.1	2.1	Unknown	Unknown	Medium	Rare	FIA Only	FIA Only			0	9
eastern hophornbeam; ironw	Ostrya virginiana	WSL	Low	3.2	0.9	0.5	No change	No change	High	Rare	Fair	Fair	Infill +	Infill +	2	10
serviceberry	Amelanchier spp.	NSL	Low	6.6	0.6	0.8	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	11
paper birch	Betula papyrifera	WDH	High	2.1	0.2	0.4	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	12
pin cherry	Prunus pensylvanica	NSL	Low	2.1	0.1	0.1	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	13
ashe juniper	Juniperus ashei	NDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			0	14
eastern redcedar	Juniperus virginiana	WDH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	15
sugar maple	Acer saccharum	WDH	High	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	16
hackberry	Celtis occidentalis	WDH	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat			3	17
black ash	Fraxinus nigra	WSH	Medium	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat			3	18
honeylocust	Gleditsia triacanthos	NSH	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat			0	19
eastern cottonwood	Populus deltoides	NSH	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Likely +	Likely +	3	20
live oak	Quercus virginiana	NDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			0	21
American mountain-ash	Sorbus americana	NSL	Low	0	0	0	Unknown	Unknown	Low	Absent	Unknown	Unknown			0	22