

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

Area of Region sq. km sq. mi FIA Plots
 8,686.5 3,353.9 5

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	High	Low	Scenario RCP45	Scenario RCP85	Scenario RCP45	Scenario RCP85	SHIFT RCP45	SHIFT RCP85
Ash	1			2	8	Increase	0	1	Very Good	0	0
Hickory	0			6	6	No Change	3	2	Good	1	1
Maple	2	0		6	0	Decrease	4	4	Fair	0	1
Oak	1	2		0		New	6	6	Poor	5	4
Pine	0	5		0		Unknown	1	1	Very Poor	0	0
Other	3	7		0					FIA Only	0	0
	7	14		14	14		14	14	Unknown	1	1
										7	7
										6	8

Potential Changes in Climate Variables

Temperature (°F)

Scenario	2009	2039	2069	2099		
Annual	CCSM45	43.1	44.9	47.7	48.3	
Average	CCSM85	43.1	45.7	48.9	52.4	
	GFDL45	43.1	49.4	47.9	49.4	
	GFDL85	43.1	46.0	49.2	54.0	
	HAD45	43.1	46.3	50.3	52.0	
	HAD85	43.1	46.9	52.0	56.9	
Growing Season	CCSM45	64.6	66.6	69.1	69.8	
	CCSM85	64.6	67.4	70.5	74.7	
May—Sep	GFDL45	64.6	72.3	70.4	72.3	
	GFDL85	64.6	67.9	71.6	77.2	
	HAD45	64.6	67.4	70.4	72.4	
	HAD85	64.6	67.5	71.7	76.7	
Coldest Month	CCSM45	9.5	11.4	13.7	14.2	
	CCSM85	9.5	10.8	13.0	15.3	
Average	GFDL45	9.5	13.4	14.4	14.9	
	GFDL85	9.5	13.1	14.7	17.4	
	HAD45	9.5	12.6	16.4	16.0	
	HAD85	9.5	15.5	20.3	23.1	
Warmest Month	CCSM45	71.7	74.5	76.0	76.8	
	CCSM85	71.7	75.7	77.7	80.4	
Average	GFDL45	71.7	75.2	76.8	78.0	
	GFDL85	71.7	75.6	77.4	81.0	
	HAD45	71.7	74.9	76.4	77.9	
	HAD85	71.7	75.2	77.6	81.0	

Precipitation (in)

Scenario	2009	2039	2069	2099		
Annual	CCSM45	23.0	23.8	23.7	22.8	
Total	CCSM85	23.0	23.1	22.4	23.1	
	GFDL45	23.0	26.4	28.6	26.7	
	GFDL85	23.0	26.7	29.2	28.4	
	HAD45	23.0	24.9	23.8	24.7	
	HAD85	23.0	24.7	24.5	26.4	
Growing Season	CCSM45	15.2	15.0	14.8	14.2	
	CCSM85	15.2	14.3	13.6	13.2	
May—Sep	GFDL45	15.2	17.8	19.0	17.3	
	GFDL85	15.2	17.6	18.7	17.5	
	HAD45	15.2	15.4	14.6	14.1	
	HAD85	15.2	15.2	13.8	13.2	

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
green ash	Fraxinus pennsylvanica	WSH	Low	20.7	63.6	30.0	Lg. dec.	Lg. dec.	Medium	Common	Poor	Poor	Infill +	Infill +	2	1
bur oak	Quercus macrocarpa	NDH	Medium	18.2	61.3	53.1	No change	No change	High	Common	Good	Good			2	2
boxelder	Acer negundo	WSH	Low	7.1	45.9	21.8	Sm. dec.	Sm. dec.	High	Rare	Poor	Poor	Infill +	Infill +	2	3
eastern hophornbeam; ironw	Ostrya virginiana	WSL	Low	9	15.1	25.4	Lg. dec.	Lg. dec.	High	Rare	Poor	Poor			0	4
American elm	Ulmus americana	WDH	Medium	4.6	5.4	18.6	No change	Sm. inc.	Medium	Rare	Poor	Fair	Infill +	Infill +	2	5
American basswood	Tilia americana	WSL	Medium	4.4	3.4	11.4	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	2	6
sugar maple	Acer saccharum	WDH	High	4.6	2.4	8.4	Very Lg. dec.	Very Lg. dec.	High	Rare	Lost	Lost			0	7
ashe juniper	Juniperus ashei	NDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			0	8
eastern redcedar	Juniperus virginiana	WDH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate ++	Migrate ++	3	9
mountain maple	Acer spicatum	NSL	Low	0	0	0	Unknown	Unknown	High	Absent	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
honeylocust	Gleditsia triacanthos	NSH	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat			3	12
eastern cottonwood	Populus deltoides	NSH	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate +	3	13
northern red oak	Quercus rubra	WDH	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat		Migrate +	3	14