

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	9,412.7	3,634.3	14

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	2	9	Increase	2	3	Very Good	0	0
Hickory	0			Medium	7	13	No Change	7	5	Good	2	2
Maple	2	Abundant	0	Low	14	2	Decrease	1	2	Fair	5	6
Oak	1	Common	4	FIA	2		New	10	10	Poor	3	1
Pine	0	Rare	8				Unknown	5	5	Very Poor	0	1
Other	8	Absent	12							FIA Only	1	1
	12		24		25	24		25	25	Unknown	3	3
											14	14

Potential Changes in Climate Variables

Temperature (°F)

	Scenario	2009	2039	2069	2099	
Annual Average	CCSM45	50.6	52.4	54.2	55.1	
	CCSM85	50.6	52.9	55.1	58.1	
	GFDL45	50.6	56.6	55.2	56.6	
	GFDL85	50.6	53.3	56.4	60.7	
	HAD45	50.6	53.4	56.7	57.7	
	HAD85	50.6	53.7	58.7	62.0	
Growing Season (May—Sep)	CCSM45	68.9	70.9	73.3	74.1	
	CCSM85	68.9	71.6	74.0	77.7	
	GFDL45	68.9	77.0	74.8	77.0	
	GFDL85	68.9	72.4	75.9	81.3	
	HAD45	68.9	71.4	74.0	75.2	
	HAD85	68.9	71.9	76.7	79.7	
Coldest Month Average	CCSM45	23.7	25.5	26.5	27.7	
	CCSM85	23.7	25.9	26.5	28.3	
	GFDL45	23.7	26.8	27.0	27.5	
	GFDL85	23.7	25.5	27.0	28.2	
	HAD45	23.7	25.9	28.7	28.2	
	HAD85	23.7	28.5	31.7	33.3	
Warmest Month Average	CCSM45	76.0	78.4	80.4	81.0	
	CCSM85	76.0	79.8	81.3	83.9	
	GFDL45	76.0	79.5	80.9	82.3	
	GFDL85	76.0	80.4	81.8	85.5	
	HAD45	76.0	78.4	80.2	80.8	
	HAD85	76.0	79.9	82.3	84.1	

Precipitation (in)

	Scenario	2009	2039	2069	2099	
Annual Total	CCSM45	24.4	26.2	24.8	24.7	
	CCSM85	24.4	25.5	25.8	25.7	
	GFDL45	24.4	27.4	29.9	28.7	
	GFDL85	24.4	27.7	30.7	29.0	
	HAD45	24.4	27.1	26.4	27.3	
	HAD85	24.4	26.1	25.6	27.0	
Growing Season (May—Sep)	CCSM45	16.1	16.9	15.2	15.4	
	CCSM85	16.1	16.1	15.9	15.3	
	GFDL45	16.1	18.3	20.0	18.4	
	GFDL85	16.1	18.2	20.3	18.6	
	HAD45	16.1	17.0	17.2	17.2	
	HAD85	16.1	16.5	15.3	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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Current and Potential Future Habitat, Capability, and Migration

Common Name	Scientific Name	Range	MR	%Cell	FIAsum	FIAiv	ChngCl45	ChngCl85	Adap	Abund	Capabil45	Capabil85	SHIFT45	SHIFT85	SSO	N
eastern cottonwood	Populus deltoides	NSH	Low	23.4	63.1	27.2	Sm. inc.	No change	Medium	Common	Good	Fair		Infill +	2	1
green ash	Fraxinus pennsylvanica	WSH	Low	19.9	62.2	19.4	No change	Sm. dec.	Medium	Common	Fair	Poor	Infill +	Infill +	2	2
American elm	Ulmus americana	WDH	Medium	30.7	61.4	11.1	Sm. dec.	No change	Medium	Common	Poor	Fair	Infill +	Infill +	2	3
eastern redcedar	Juniperus virginiana	WDH	Medium	18.9	53.6	23.0	No change	Sm. inc.	Medium	Common	Fair	Good	Infill +		2	4
red mulberry	Morus rubra	NSL	Low	22.3	38.1	12.4	No change	Sm. dec.	Medium	Rare	Poor	Very Poor	Infill +		2	5
hackberry	Celtis occidentalis	WDH	Medium	13.6	16.1	9.3	Lg. inc.	Lg. inc.	High	Rare	Good	Good			2	6
bur oak	Quercus macrocarpa	NDH	Medium	4.2	14.5	54.6	No change	No change	High	Rare	Fair	Fair	Infill +	Infill +	2	7
boxelder	Acer negundo	WSH	Low	8.5	9.9	18.7	No change	No change	High	Rare	Fair	Fair	Infill +	Infill +	2	8
silver maple	Acer saccharinum	NSH	Low	4.2	6.9	26.1	No change	No change	High	Rare	Fair	Fair	Infill +	Infill +	2	9
Siberian elm	Ulmus pumila	NDH	FIA	3.2	5.5	15.6	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	10
peachleaf willow	Salix amygdaloides	NSLX	FIA	5.8	5.3	7.8	Unknown	Unknown	Medium	Rare	FIA Only	FIA Only			0	11
black walnut	Juglans nigra	WDH	Low	3.2	2.8	7.9	No change	Sm. inc.	Medium	Rare	Poor	Fair		Infill +	2	12
ashe juniper	Juniperus ashei	NDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			0	13
cittamwood/gum bumelia	Sideroxylon lanuginosum ssp.	NSL	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat			3	14
American hornbeam; musclev	Carpinus caroliniana	WSL	Low	0	0	0	Unknown	Unknown	Medium	Modeled	Unknown	Unknown			0	15
sugarberry	Celtis laevigata	NDH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	16
honeylocust	Gleditsia triacanthos	NSH	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat			3	17
Osage-orange	Maclura pomifera	NDH	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat			3	18
eastern hophornbeam; ironw	Ostrya virginiana	WSL	Low	0	0	0	Unknown	Unknown	High	Absent	Unknown	Unknown			0	19
pin cherry	Prunus pensylvanica	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	20
post oak	Quercus stellata	WDH	High	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat			3	21
black locust	Robinia pseudoacacia	NDH	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	22
black willow	Salix nigra	NSH	Low	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat			3	23
cedar elm	Ulmus crassifolia	NDH	Medium	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat			0	24
slippery elm	Ulmus rubra	WSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	25