

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	9,549.4	3,687.0	11

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	7	Increase	1	1	Very Good	0	0
Hickory	0			Medium	8	13	No Change	2	4	Good	1	1
Maple	1	Abundant	0	Low	12	4	Decrease	6	4	Fair	2	5
Oak	0	Common	5	FIA	2		New	12	12	Poor	5	3
Pine	0	Rare	6				Unknown	4	4	Very Poor	0	0
Other	9	Absent	14							FIA Only	1	1
	11		25		25	24		25	25	Unknown	2	2
											11	12
											11	11

Potential Changes in Climate Variables

Temperature (°F)

	Scenario	2009	2039	2069	2099	
Annual Average	CCSM45	52.9	54.7	56.5	57.3	
	CCSM85	52.9	55.2	57.3	60.3	
	GFDL45	52.9	58.9	57.6	58.9	
	GFDL85	52.9	55.6	58.7	62.9	
	HAD45	52.9	55.6	58.8	59.7	
HAD85	52.9	55.9	60.9	63.9		
Growing Season (May—Sep)	CCSM45	71.3	73.4	75.7	76.4	
	CCSM85	71.3	74.0	76.3	80.0	
	GFDL45	71.3	79.5	77.3	79.5	
	GFDL85	71.3	74.9	78.4	83.7	
	HAD45	71.3	73.7	76.3	77.2	
HAD85	71.3	74.2	79.1	81.9		
Coldest Month Average	CCSM45	26.3	28.2	29.0	30.1	
	CCSM85	26.3	28.8	29.2	31.0	
	GFDL45	26.3	29.7	29.9	30.3	
	GFDL85	26.3	28.0	29.4	30.4	
	HAD45	26.3	28.5	31.0	30.7	
HAD85	26.3	30.7	33.6	35.2		
Warmest Month Average	CCSM45	78.8	81.2	83.0	83.7	
	CCSM85	78.8	82.5	84.0	86.3	
	GFDL45	78.8	82.6	83.9	85.4	
	GFDL85	78.8	83.2	84.6	88.4	
	HAD45	78.8	81.2	82.8	83.3	
HAD85	78.8	82.8	85.0	86.5		

Precipitation (in)

	Scenario	2009	2039	2069	2099	
Annual Total	CCSM45	24.0	25.1	24.2	24.0	
	CCSM85	24.0	24.9	25.2	25.3	
	GFDL45	24.0	26.4	28.5	27.7	
	GFDL85	24.0	27.4	30.4	28.3	
	HAD45	24.0	26.3	25.7	26.6	
HAD85	24.0	25.2	24.4	26.4		
Growing Season (May—Sep)	CCSM45	15.5	15.6	14.4	14.4	
	CCSM85	15.5	15.5	15.1	15.0	
	GFDL45	15.5	17.0	18.2	17.2	
	GFDL85	15.5	17.4	19.5	17.9	
	HAD45	15.5	16.0	16.8	16.6	
HAD85	15.5	15.5	14.4	14.4		

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	24.7	87.2	35.6	Lg. dec.	Lg. dec.	Medium	Common	Poor	Poor	Infill +	Infill +	2	1
honeylocust	Gleditsia triacanthos	NSH	Low	5.8	68.5	36.7	Very Lg. dec.	Lg. dec.	High	Common	Lost	Fair			0	2
eastern cottonwood	Populus deltoides	NSH	Low	18.8	59.7	43.0	No change	No change	Medium	Common	Fair	Fair	Infill +	Infill +	2	3
hackberry	Celtis occidentalis	WDH	Medium	21.7	57.9	11.0	Sm. dec.	Sm. dec.	High	Common	Fair	Fair	Infill +	Infill +	2	4
American elm	Ulmus americana	WDH	Medium	23.6	55.9	21.6	Sm. dec.	No change	Medium	Common	Poor	Fair	Infill +	Infill +	2	5
boxelder	Acer negundo	WSH	Low	16.8	16.3	15.6	Sm. dec.	Sm. dec.	High	Rare	Poor	Poor	Infill +	Infill +	2	6
red mulberry	Morus rubra	NSL	Low	7.7	7.6	14.4	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	2	7
eastern redcedar	Juniperus virginiana	WDH	Medium	14.6	5.8	5.0	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			2	8
Siberian elm	Ulmus pumila	NDH	FIA	4.2	4.0	15.4	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	9
Osage-orange	Maclura pomifera	NDH	Medium	0.1	1.9	0.1	Sm. dec.	No change	High	Rare	Poor	Fair			0	10
peachleaf willow	Salix amygdaloides	NSLX	FIA	2.7	1.8	4.3	Unknown	Unknown	Medium	Rare	FIA Only	FIA Only			0	11
ashe juniper	Juniperus ashei	NDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			0	12
serviceberry	Amelanchier spp.	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	13
cittamwood/gum bumelia	Sideroxylon lanuginosum ssp.	NSL	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	14
pecan	Carya illinoensis	NSH	Low	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat		Migrate +	3	15
sugarberry	Celtis laevigata	NDH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	16
white ash	Fraxinus americana	WDL	Medium	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat	Migrate +		3	17
black walnut	Juglans nigra	WDH	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	18
pin cherry	Prunus pensylvanica	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	19
bur oak	Quercus macrocarpa	NDH	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	20
post oak	Quercus stellata	WDH	High	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat			3	21
live oak	Quercus virginiana	NDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			0	22
black locust	Robinia pseudoacacia	NDH	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	23
black willow	Salix nigra	NSH	Low	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat			3	24
cedar elm	Ulmus crassifolia	NDH	Medium	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat			0	25