

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	10,533	4,066.9	159

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	0		High	4	5	Increase	1	1	Very Good	0	0
Hickory	2		Medium	6	10	No Change	5	4	Good	4	4
Maple	0	Abundant	Low	8	3	Decrease	11	12	Fair	3	3
Oak	4	Common	FIA	0		New	0	0	Poor	4	3
Pine	0	Rare				Unknown	1	1	Very Poor	6	7
Other	11	Absent							FIA Only	0	0
	17	18		18	18		18	18	Unknown	1	1
										18	18

Potential Changes in Climate Variables

Temperature (°F)

	Scenario	2009	2039	2069	2099
Annual Average	CCSM45	65.0	66.5	68.0	68.6
	CCSM85	65.0	67.0	69.0	71.5
	GFDL45	65.0	69.0	69.3	70.9
	GFDL85	65.0	67.9	70.9	74.7
	HAD45	65.0	67.2	69.7	70.5
HAD85	65.0	67.7	71.2	74.2	
Growing Season (May—Sep)	CCSM45	78.6	79.9	81.2	82.0
	CCSM85	78.6	80.7	82.5	85.6
	GFDL45	78.6	83.4	83.6	86.2
	GFDL85	78.6	82.5	86.0	90.7
	HAD45	78.6	80.7	82.7	83.2
HAD85	78.6	81.3	85.1	87.7	
Coldest Month Average	CCSM45	44.6	46.8	47.4	47.9
	CCSM85	44.6	46.6	47.5	48.9
	GFDL45	44.6	47.9	47.8	48.0
	GFDL85	44.6	45.7	46.8	47.1
	HAD45	44.6	45.0	46.8	47.1
HAD85	44.6	47.8	49.3	50.8	
Warmest Month Average	CCSM45	83.5	84.5	85.4	85.6
	CCSM85	83.5	85.4	86.1	87.7
	GFDL45	83.5	88.4	88.7	90.4
	GFDL85	83.5	88.7	90.3	93.8
	HAD45	83.5	85.7	86.6	86.9
HAD85	83.5	86.5	88.4	89.4	

Precipitation (in)

	Scenario	2009	2039	2069	2099
Annual Total	CCSM45	30.5	31.6	31.5	29.6
	CCSM85	30.5	29.9	33.4	31.5
	GFDL45	30.5	30.0	34.8	28.3
	GFDL85	30.5	29.3	31.2	29.2
	HAD45	30.5	31.3	30.5	32.1
HAD85	30.5	30.7	27.8	30.8	
Growing Season (May—Sep)	CCSM45	15.0	16.8	15.2	14.9
	CCSM85	15.0	15.4	16.4	14.5
	GFDL45	15.0	15.0	17.6	14.2
	GFDL85	15.0	15.2	15.7	14.6
	HAD45	15.0	14.8	14.6	16.0
HAD85	15.0	14.4	12.6	14.6	

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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USDA Forest Service
Northern Research Station
Landscape Change Research Group
Iverson, Peters, Prasad, Matthews

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Common Name	Scientific Name	Range	MR	%Cell	FIAsum	FIAiv	ChngCl45	ChngCl85	Adap	Abund	Capabil45	Capabil85	SHIFT45	SHIFT85	SSO	N
ashe juniper	Juniperus ashei	NDH	High	66.2	2791.8	43.0	No change	No change	Medium	Abundant	Good	Good			0	1
live oak	Quercus virginiana	NDH	High	67.8	1522.0	22.6	No change	No change	Medium	Abundant	Good	Good			1	2
cedar elm	Ulmus crassifolia	NDH	Medium	52.3	554.6	12.9	Sm. inc.	Sm. inc.	Low	Abundant	Good	Good			1	3
post oak	Quercus stellata	WDH	High	25.1	536.1	18.7	Sm. dec.	Lg. dec.	High	Abundant	Good	Good			1	4
cittamwood/gum bumelia	Sideroxylon lanuginosum ssp.	NSL	Low	18	234.0	10.0	Sm. dec.	Lg. dec.	High	Common	Fair	Fair			1	5
hackberry	Celtis occidentalis	WDH	Medium	16.1	88.1	12.1	Lg. dec.	Lg. dec.	High	Common	Fair	Fair			1	6
red mulberry	Morus rubra	NSL	Low	1.4	60.7	28.6	Sm. dec.	Sm. dec.	Medium	Common	Poor	Poor			0	7
sugarberry	Celtis laevigata	NDH	Medium	12.2	54.0	5.9	Sm. dec.	Sm. dec.	Medium	Common	Poor	Poor			0	8
sycamore	Platanus occidentalis	NSL	Low	4.7	34.6	18.6	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	9
blackjack oak	Quercus marilandica	NSL	Medium	10.7	29.9	7.5	No change	No change	High	Rare	Fair	Fair			1	10
black hickory	Carya texana	NDL	High	0.9	15.9	16.7	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	11
American elm	Ulmus americana	WDH	Medium	6.8	10.3	1.9	No change	Sm. dec.	Medium	Rare	Poor	Very Poor			1	12
pecan	Carya illinoensis	NSH	Low	6.3	5.9	4.0	No change	No change	Low	Rare	Very Poor	Very Poor			0	13
bur oak	Quercus macrocarpa	NDH	Medium	4.4	5.7	3.7	Sm. dec.	Sm. dec.	High	Rare	Poor	Poor			0	14
black willow	Salix nigra	NSH	Low	2	3.9	8.6	Sm. dec.	Sm. dec.	Low	Rare	Very Poor	Very Poor			0	15
black walnut	Juglans nigra	WDH	Low	3.8	2.1	8.9	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	16
eastern redbud	Cercis canadensis	NSL	Low	3.8	0.2	0.8	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	17
shellbark hickory	Carya laciniosa	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	18