

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	10,188	3,933.4	17

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	3	6	Increase	1	1	Very Good	0	0
Hickory	1			Medium	8	13	No Change	6	5	Good	0	0
Maple	0	Abundant	0	Low	10	3	Decrease	6	7	Fair	3	2
Oak	0	Common	0	FIA	2		New	5	5	Poor	5	6
Pine	0	Rare	15				Unknown	5	5	Very Poor	5	5
Other	14	Absent	8							FIA Only	1	1
	15		23		23	22		23	23	Unknown	3	3
											17	17

Potential Changes in Climate Variables

Temperature (°F)

	Scenario	2009	2039	2069	2099	
Annual Average	CCSM45	61.9	63.6	65.1	65.9	
	CCSM85	61.9	64.2	65.9	68.9	
	GFDL45	61.9	68.1	66.6	68.2	
	GFDL85	61.9	65.0	68.1	72.3	
	HAD45	61.9	64.1	66.8	67.7	
	HAD85	61.9	64.6	68.9	71.7	
Growing Season (May—Sep)	CCSM45	78.2	79.8	81.6	82.4	
	CCSM85	78.2	80.6	82.4	86.0	
	GFDL45	78.2	86.5	84.0	86.7	
	GFDL85	78.2	82.5	86.1	91.6	
	HAD45	78.2	80.1	82.3	83.0	
	HAD85	78.2	80.8	85.3	87.7	
Coldest Month (Average)	CCSM45	38.3	40.5	41.1	42.1	
	CCSM85	38.3	40.7	41.2	42.9	
	GFDL45	38.3	41.6	41.6	41.8	
	GFDL85	38.3	39.2	40.5	41.1	
	HAD45	38.3	39.2	41.4	41.6	
	HAD85	38.3	41.6	43.5	45.1	
Warmest Month (Average)	CCSM45	84.5	86.2	87.6	88.0	
	CCSM85	84.5	87.0	87.8	90.0	
	GFDL45	84.5	89.8	90.3	92.5	
	GFDL85	84.5	90.0	92.1	96.7	
	HAD45	84.5	86.2	87.5	87.7	
	HAD85	84.5	87.3	89.4	90.5	

Precipitation (in)

	Scenario	2009	2039	2069	2099	
Annual Total	CCSM45	27.4	28.8	28.0	26.9	
	CCSM85	27.4	27.0	29.3	27.8	
	GFDL45	27.4	27.8	32.1	27.3	
	GFDL85	27.4	27.8	29.8	27.6	
	HAD45	27.4	30.2	28.3	29.3	
	HAD85	27.4	28.2	24.8	28.8	
Growing Season (May—Sep)	CCSM45	15.2	15.2	14.5	14.2	
	CCSM85	15.2	15.0	15.1	14.1	
	GFDL45	15.2	15.3	18.0	15.1	
	GFDL85	15.2	16.3	16.9	15.1	
	HAD45	15.2	16.7	16.1	16.2	
	HAD85	15.2	14.6	12.5	15.1	

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
ashe juniper	Juniperus ashei	NDH	High	0.9	45.5	10.7	No change	No change	Medium	Rare	Poor	Poor			0	1
black willow	Salix nigra	NSH	Low	14.6	43.0	42.6	Lg. dec.	Lg. dec.	Low	Rare	Very Poor	Very Poor			0	2
cittamwood/gum bumelia	Sideroxylon lanuginosum ssp.	NSL	Low	16.2	41.0	24.3	No change	Sm. dec.	High	Rare	Fair	Poor			1	3
American elm	Ulmus americana	WDH	Medium	5.4	23.7	26.7	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	2	4
black locust	Robinia pseudoacacia	NDH	Low	6.2	22.7	30.8	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	5
sugarberry	Celtis laevigata	NDH	Medium	6.9	14.1	14.1	No change	No change	Medium	Rare	Poor	Poor			1	6
eastern cottonwood	Populus deltoides	NSH	Low	3.9	12.3	50.0	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	7
honeylocust	Gleditsia triacanthos	NSH	Low	8.1	9.7	9.2	Sm. dec.	Sm. dec.	High	Rare	Poor	Poor	Infill +	Infill +	1	8
Siberian elm	Ulmus pumila	NDH	FIA	6.9	9.7	17.6	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	9
Osage-orange	Maclura pomifera	NDH	Medium	3	7.3	22.7	Sm. dec.	Sm. dec.	High	Rare	Poor	Poor			0	10
hackberry	Celtis occidentalis	WDH	Medium	2.8	5.6	3.5	No change	No change	High	Rare	Fair	Fair		Infill +	2	11
red mulberry	Morus rubra	NSL	Low	6.9	5.3	8.7	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	12
eastern redcedar	Juniperus virginiana	WDH	Medium	7.7	1.7	3.3	Sm. inc.	Sm. inc.	Medium	Rare	Fair	Fair	Infill +	Infill +	2	13
pecan	Carya illinoensis	NSH	Low	3.9	1.1	4.5	No change	No change	Low	Rare	Very Poor	Very Poor			2	14
wild plum	Prunus americana	NSLX	FIA	3.9	0.9	3.7	Unknown	Unknown	Medium	Rare	FIA Only	FIA Only			0	15
striped maple	Acer pensylvanicum	NSL	Medium	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	16
serviceberry	Amelanchier spp.	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	17
green ash	Fraxinus pennsylvanica	WSH	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	18
blackjack oak	Quercus marilandica	NSL	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Likely +	Likely +	3	19
swamp chestnut oak	Quercus michauxii	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	Likely +	Likely +	3	21
live oak	Quercus virginiana	NDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate ++	Migrate ++	3	22
cedar elm	Ulmus crassifolia	NDH	Medium	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat	Migrate ++	Migrate ++	3	23