

**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  
 1,765.6    681.7    6

**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	4	8	Increase	3	3	Very Good	0	0	Likely	2	2
Hickory	3			Medium	10	13	No Change	3	3	Good	3	3	Infill	9	9
Maple	1	Abundant	0	Low	10	3	Decrease	9	9	Fair	1	1	Migrate	1	2
Oak	2	Common	7	FIA	0		New	6	6	Poor	6	6			
Pine	0	Rare	8				Unknown	3	3	Very Poor	3	3			
Other	8	Absent	8							FIA Only	0	0			
	<b>15</b>		<b>23</b>		<b>24</b>	<b>24</b>		<b>24</b>	<b>24</b>	Unknown	3	3			
											<b>16</b>	<b>16</b>			

**Potential Changes in Climate Variables**

**Temperature (°F)**

Scenario	2009	2039	2069	2099	
Annual	70.1	71.5	72.9	73.1	
Average	70.1	71.7	73.8	75.8	
GFDL45	70.1	75.2	74.2	75.3	
GFDL85	70.1	72.5	75.5	78.6	
HAD45	70.1	72.0	74.2	75.3	
HAD85	70.1	72.3	75.1	78.1	
Growing Season	81.1	82.2	83.2	83.5	
May—Sep	81.1	86.9	85.4	87.0	
	81.1	83.8	87.0	90.6	
	81.1	82.9	84.7	85.4	
	81.1	83.1	85.9	88.4	
Coldest Month	52.8	54.9	55.8	55.9	
Average	52.8	56.0	56.2	56.4	
GFDL45	52.8	54.2	55.5	56.0	
GFDL85	52.8	53.7	55.4	56.2	
HAD45	52.8	55.7	56.9	58.6	
HAD85	52.8	55.7	56.9	58.6	
Warmest Month	84.1	85.1	85.6	85.7	
Average	84.1	87.2	87.8	88.7	
GFDL45	84.1	87.4	88.9	91.0	
GFDL85	84.1	86.0	86.7	87.1	
HAD45	84.1	86.2	87.6	88.6	
HAD85	84.1	86.2	87.6	88.6	

**Precipitation (in)**

Scenario	2009	2039	2069	2099	
Annual	46.9	51.5	54.5	51.4	
Total	46.9	50.5	50.7	48.9	
GFDL45	46.9	49.3	57.1	45.5	
GFDL85	46.9	47.4	49.2	47.1	
HAD45	46.9	48.8	45.8	49.6	
HAD85	46.9	51.3	46.9	48.8	
Growing Season	22.4	26.5	27.0	24.3	
May—Sep	22.4	25.0	31.8	23.2	
	22.4	24.4	25.1	25.0	
	22.4	22.0	21.6	24.9	
	22.4	24.2	22.6	23.2	

**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
sugarberry	Celtis laevigata	NDH	Medium	65.4	439.7	8.4	Sm. dec.	Sm. dec.	Medium	Common	Poor	Poor	Infill +	Infill +	0	1
cedar elm	Ulmus crassifolia	NDH	Medium	38.9	295.7	13.6	No change	No change	Low	Common	Poor	Poor	Infill +	Infill +	0	2
pecan	Carya illinoensis	NSH	Low	51.1	283.5	11.6	Lg. dec.	Lg. dec.	Low	Common	Very Poor	Very Poor			0	3
green ash	Fraxinus pennsylvanica	WSH	Low	24.6	250.3	19.8	Sm. dec.	Sm. dec.	Medium	Common	Poor	Poor	Infill +	Infill +	0	4
live oak	Quercus virginiana	NDH	High	38.9	127.0	10.5	Sm. inc.	Sm. inc.	Medium	Common	Good	Good	Infill ++	Infill ++	1	5
water oak	Quercus nigra	WDH	High	40.8	97.6	6.3	No change	No change	Medium	Common	Fair	Fair	Infill +	Infill +	1	6
American elm	Ulmus americana	WDH	Medium	60.5	68.3	15.7	Lg. dec.	Lg. dec.	Medium	Common	Poor	Poor	Infill +	Infill +	0	7
slippery elm	Ulmus rubra	WSL	Low	1.9	42.2	2.5	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			2	8
eastern redcedar	Juniperus virginiana	WDH	Medium	22	40.4	27.6	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	1	9
hackberry	Celtis occidentalis	WDH	Medium	15.9	18.8	9.3	Sm. inc.	Sm. inc.	High	Rare	Good	Good	Infill ++	Infill ++	2	10
black hickory	Carya texana	NDL	High	23	15.1	1.5	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	11
Osage-orange	Maclura pomifera	NDH	Medium	17.8	8.7	0.4	Very Lg. dec.	Very Lg. dec.	High	Rare	Lost	Lost			0	12
bitternut hickory	Carya cordiformis	WSL	Low	1.1	5.4	0.2	Very Lg. dec.	Very Lg. dec.	High	Rare	Lost	Lost			0	13
honeylocust	Gleditsia triacanthos	NSH	Low	15.9	3.2	1.6	Sm. dec.	Sm. dec.	High	Rare	Poor	Poor			0	14
boxelder	Acer negundo	WSH	Low	22	2.7	1.8	Lg. inc.	Lg. inc.	High	Rare	Good	Good	Infill ++	Infill ++	1	15
ashe juniper	Juniperus ashei	NDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			0	16
bald cypress	Taxodium distichum	NSH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate +	3	17
cittamwood/gum bumelia	Sideroxylon lanuginosum ssp.	NSL	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Likely +	Likely +	3	18
bigleaf magnolia	Magnolia macrophylla	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	19
sycamore	Platanus occidentalis	NSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Likely +	Likely +	3	20
blackjack oak	Quercus marilandica	NSL	Medium	0	0	0	Unknown	Unknown	High	Modeled	Unknown	Unknown			0	21
nuttall oak	Quercus texana	NSH	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat			0	22
black willow	Salix nigra	NSH	Low	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	23
American basswood	Tilia americana	WSL	Medium	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	24