

**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  
 9,130.7    3,525.4    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	
		Abundant	Common	High	Low	Scenario RCP45	Scenario RCP85	Scenario RCP45	Scenario RCP85	SHIFT RCP45	SHIFT RCP85
Ash	1			2	8	Increase	3	3	Very Good	0	0
Hickory	0			6	10	No Change	6	7	Good	3	4
Maple	1	Abundant	0	11	1	Decrease	2	1	Fair	4	3
Oak	1	Common	2	1	1	New	8	8	Poor	2	3
Pine	0	Rare	10	1	1	Unknown	1	1	Very Poor	2	1
Other	9	Absent	8	20	19		20	20	FIA Only	0	0
	<b>12</b>		<b>20</b>						Unknown	0	0
							<b>11</b>	<b>11</b>			

**Potential Changes in Climate Variables**

**Temperature (°F)**

Scenario	2009	2039	2069	2099
Annual Average	48.7	50.6	52.9	53.6
GFDL45	48.7	54.8	53.4	54.8
GFDL85	48.7	51.5	54.6	59.1
HAD45	48.7	51.5	55.2	56.4
HAD85	48.7	52.2	57.1	61.1
Growing Season	68.1	70.3	72.8	73.5
GFDL45	68.1	76.1	74.1	76.1
GFDL85	68.1	71.7	75.3	80.9
HAD45	68.1	70.3	73.4	74.5
HAD85	68.1	71.2	75.6	79.4
Coldest Month	18.7	21.3	22.5	23.6
GFDL45	18.7	22.3	23.0	23.3
GFDL85	18.7	21.7	23.2	25.0
HAD45	18.7	21.5	25.0	24.6
HAD85	18.7	24.5	28.7	31.0
Warmest Month	74.8	77.4	79.2	80.0
GFDL45	74.8	78.5	79.9	81.2
GFDL85	74.8	79.2	80.7	84.5
HAD45	74.8	76.8	78.9	79.5
HAD85	74.8	78.5	81.0	83.5

**Precipitation (in)**

Scenario	2009	2039	2069	2099
Annual Total	27.5	28.5	27.4	27.6
GFDL45	27.5	30.9	33.9	33.2
GFDL85	27.5	31.1	34.4	33.8
HAD45	27.5	32.0	30.2	30.8
HAD85	27.5	29.1	30.0	32.5
Growing Season	17.1	16.8	15.5	15.8
GFDL45	17.1	19.6	21.1	19.7
GFDL85	17.1	19.8	20.9	19.6
HAD45	17.1	19.3	17.9	17.9
HAD85	17.1	17.5	16.8	16.2

**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
eastern redcedar	Juniperus virginiana	WDH	Medium	25.5	79.1	23.0	No change	No change	Medium	Common	Fair	Fair	Infill +	Infill +	2	1
bur oak	Quercus macrocarpa	NDH	Medium	14.8	52.9	26.5	No change	No change	High	Common	Good	Good			2	2
eastern cottonwood	Populus deltoides	NSH	Low	16.4	49.9	26.3	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	2	3
red mulberry	Morus rubra	NSL	Low	16.6	45.4	29.1	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			2	4
Siberian elm	Ulmus pumila	NDH	FIA	20.3	27.9	13.0	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	5
American elm	Ulmus americana	WDH	Medium	22.4	23.3	7.7	Sm. inc.	Lg. inc.	Medium	Rare	Fair	Good	Infill +		2	6
black walnut	Juglans nigra	WDH	Low	0.5	16.8	6.5	Sm. dec.	No change	Medium	Rare	Very Poor	Poor		Infill +	2	7
hackberry	Celtis occidentalis	WDH	Medium	15.8	8.7	5.0	Lg. inc.	Lg. inc.	High	Rare	Good	Good			2	8
boxelder	Acer negundo	WSH	Low	9.6	7.1	7.3	No change	No change	High	Rare	Fair	Fair	Infill +	Infill +	2	9
slippery elm	Ulmus rubra	WSL	Low	6.2	5.4	6.7	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	2	10
green ash	Fraxinus pennsylvanica	WSH	Low	10	4.2	4.0	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			2	11
honeylocust	Gleditsia triacanthos	NSH	Low	4.4	2.0	7.2	No change	No change	High	Rare	Fair	Fair			0	12
silver maple	Acer saccharinum	NSH	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat			3	13
Osage-orange	Maclura pomifera	NDH	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat			3	14
eastern hophornbeam; ironw	Ostrya virginiana	WSL	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Migrate ++		3	15
post oak	Quercus stellata	WDH	High	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat		Migrate ++	3	16
black oak	Quercus velutina	WDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	17
black locust	Robinia pseudoacacia	NDH	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +	Migrate ++	3	18
black willow	Salix nigra	NSH	Low	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat	Likely +	Likely +	3	19
American basswood	Tilia americana	WSL	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +		3	20