

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 29

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	6	11	Increase	4	5	Very Good	0	0	Likely	1	1
Hickory	0			Medium	9	15	No Change	3	2	Good	2	2	Infill	5	6
Maple	2	Abundant	0	Low	12	2	Decrease	8	8	Fair	6	7	Migrate	2	1
Oak	1	Common	4	FIA	3		New	11	11	Poor	3	2		8	8
Pine	2	Rare	14				Unknown	4	4	Very Poor	4	4			
Other	12	Absent	12							FIA Only	1	1			
	18		30		30	28		30	30	Unknown	1	1			
											17	17			

Potential Changes in Climate Variables

Temperature (°F)

Scenario	2009	2039	2069	2099		
Annual	CCSM45	48.6	50.4	52.7	53.4	
Average	CCSM85	48.6	51.0	53.5	56.7	
	GFDL45	48.6	54.4	53.1	54.5	
	GFDL85	48.6	51.3	54.3	58.8	
	HAD45	48.6	51.4	55.1	56.2	
	HAD85	48.6	52.0	57.0	60.8	
Growing Season	CCSM45	67.8	69.9	72.5	73.2	
	CCSM85	67.8	70.7	73.1	77.2	
May—Sep	GFDL45	67.8	75.5	73.6	75.7	
	GFDL85	67.8	71.2	74.9	80.4	
	HAD45	67.8	70.0	73.1	74.3	
	HAD85	67.8	70.8	75.2	79.0	
Coldest Month	CCSM45	19.5	21.7	22.9	23.9	
	CCSM85	19.5	21.6	22.9	24.8	
Average	GFDL45	19.5	22.9	23.4	23.7	
	GFDL85	19.5	22.4	23.9	25.5	
	HAD45	19.5	22.4	25.9	25.3	
	HAD85	19.5	25.2	29.4	31.4	
Warmest Month	CCSM45	74.9	77.5	79.5	80.2	
	CCSM85	74.9	78.9	80.5	83.5	
Average	GFDL45	74.9	78.6	80.0	81.2	
	GFDL85	74.9	79.4	80.8	84.6	
	HAD45	74.9	77.1	79.2	79.9	
	HAD85	74.9	78.6	81.2	83.7	

Precipitation (in)

Scenario	2009	2039	2069	2099		
Annual	CCSM45	25.6	26.9	25.6	25.6	
Total	CCSM85	25.6	26.2	26.9	26.7	
	GFDL45	25.6	29.1	31.5	30.7	
	GFDL85	25.6	28.8	32.3	31.4	
	HAD45	25.6	29.6	28.1	29.0	
	HAD85	25.6	27.3	28.0	30.4	
Growing Season	CCSM45	16.2	16.3	14.9	14.8	
	CCSM85	16.2	15.3	15.8	15.0	
May—Sep	GFDL45	16.2	18.8	20.2	18.8	
	GFDL85	16.2	18.7	20.1	18.9	
	HAD45	16.2	18.1	16.8	17.1	
	HAD85	16.2	16.4	15.8	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
eastern redcedar	Juniperus virginiana	WDH	Medium	44	225.2	23.9	No change	No change	Medium	Common	Fair	Fair	Infill +	Infill +	2	1
bur oak	Quercus macrocarpa	NDH	Medium	31.3	136.2	34.9	Sm. dec.	Sm. dec.	High	Common	Fair	Fair	Infill +	Infill +	2	2
hackberry	Celtis occidentalis	WDH	Medium	26.5	76.6	11.2	Sm. dec.	Sm. dec.	High	Common	Fair	Fair	Infill +	Infill +	2	3
Siberian elm	Ulmus pumila	NDH	FIA	8.5	57.6	15.5	Unknown	Unknown	NA	Common	NNIS	NNIS			0	4
American elm	Ulmus americana	WDH	Medium	42	43.8	8.6	Sm. inc.	Sm. inc.	Medium	Rare	Fair	Fair	Infill +	Infill +	2	5
green ash	Fraxinus pennsylvanica	WSH	Low	32.2	36.7	10.7	No change	Sm. dec.	Medium	Rare	Poor	Very Poor	Infill +		2	6
black willow	Salix nigra	NSH	Low	0.1	22.2	1.9	Lg. dec.	Sm. dec.	Low	Rare	Very Poor	Very Poor			2	7
eastern cottonwood	Populus deltoides	NSH	Low	11.1	17.8	15.3	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			2	8
black walnut	Juglans nigra	WDH	Low	5.9	17.5	28.0	Lg. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			2	9
jack pine	Pinus banksiana	NSH	Medium	0.5	12.3	5.5	Sm. dec.	Sm. dec.	High	Rare	Poor	Poor			0	10
black locust	Robinia pseudoacacia	NDH	Low	4.4	12.2	44.5	Sm. dec.	Sm. inc.	Medium	Rare	Very Poor	Fair		Infill +	2	11
red mulberry	Morus rubra	NSL	Low	14.3	12.0	9.7	Sm. inc.	Sm. inc.	Medium	Rare	Fair	Fair		Infill +	2	12
Scots pine	Pinus sylvestris	NSH	FIA	0.4	4.9	1.5	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	13
northern catalpa	Catalpa speciosa	NSHX	FIA	4.4	3.7	13.3	Unknown	Unknown	Medium	Rare	FIA Only	FIA Only			0	14
boxelder	Acer negundo	WSH	Low	3.9	3.1	2.6	No change	No change	High	Rare	Fair	Fair			0	15
silver maple	Acer saccharinum	NSH	Low	2.4	2.0	3.9	Sm. dec.	Sm. dec.	High	Rare	Poor	Poor			0	16
slippery elm	Ulmus rubra	WSL	Low	5.5	0.9	0.7	Lg. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	17
Osage-orange	Maclura pomifera	NDH	Medium	4.4	0.2	0.9	Lg. inc.	Lg. inc.	High	Rare	Good	Good			2	18
ashe juniper	Juniperus ashei	NDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			0	19
shortleaf pine	Pinus echinata	WDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			0	20
red maple	Acer rubrum	WDH	High	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat			3	21
black hickory	Carya texana	NDL	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	22
eastern redbud	Cercis canadensis	NSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +		3	23
honeylocust	Gleditsia triacanthos	NSH	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Likely +	Likely +	3	24
eastern hophornbeam; ironw	Ostrya virginiana	WSL	Low	0	0	0	Unknown	Unknown	High	Absent	Unknown	Unknown			0	25
black cherry	Prunus serotina	WDL	Medium	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat		Migrate +	3	26
blackjack oak	Quercus marilandica	NSL	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat			3	27
post oak	Quercus stellata	WDH	High	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat			3	28
black oak	Quercus velutina	WDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	29
American basswood	Tilia americana	WSL	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +		3	30