

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
 9,813.8 3,789.1 145

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	3			High	12	20	Increase	22	26	Very Good	8	12	Likely	1	1
Hickory	6			Medium	23	33	No Change	11	9	Good	18	14	Infill	6	9
Maple	4	Abundant	3	Low	25	9	Decrease	15	13	Fair	7	8	Migrate	2	6
Oak	11	Common	23	FIA	3		New	9	10	Poor	6	7			
Pine	1	Rare	25				Unknown	6	5	Very Poor	8	6			
Other	26	Absent	12							FIA Only	2	2			
	51		63		63	62		63	63	Unknown	3	2			
											52	51			

Potential Changes in Climate Variables

Temperature (°F)

	Scenario	2009	2039	2069	2099	
Annual Average	CCSM45	55.9	57.9	59.8	60.1	
	CCSM85	55.9	58.5	60.9	64.0	
	GFDL45	55.9	59.9	61.1	62.1	
	GFDL85	55.9	58.9	61.8	65.8	
	HAD45	55.9	58.5	61.4	62.8	
	HAD85	55.9	58.7	63.5	67.1	
Growing Season May—Sep	CCSM45	72.3	74.6	76.1	76.7	
	CCSM85	72.3	75.4	77.7	81.6	
	GFDL45	72.3	77.3	78.6	80.5	
	GFDL85	72.3	76.1	79.5	84.5	
	HAD45	72.3	75.2	77.7	79.2	
	HAD85	72.3	75.5	81.3	84.5	
Coldest Month Average	CCSM45	30.3	32.5	33.8	34.3	
	CCSM85	30.3	33.3	34.4	36.1	
	GFDL45	30.3	34.7	35.0	35.1	
	GFDL85	30.3	32.8	34.0	34.9	
	HAD45	30.3	31.5	34.1	34.1	
	HAD85	30.3	33.2	35.5	37.3	
Warmest Month Average	CCSM45	78.6	81.2	82.2	82.7	
	CCSM85	78.6	82.2	83.4	85.0	
	GFDL45	78.6	83.1	84.6	86.0	
	GFDL85	78.6	83.0	84.7	88.3	
	HAD45	78.6	81.9	83.6	84.4	
	HAD85	78.6	83.0	86.1	87.6	

Precipitation (in)

	Scenario	2009	2039	2069	2099	
Annual Total	CCSM45	45.0	43.4	46.6	45.8	
	CCSM85	45.0	44.6	46.1	46.2	
	GFDL45	45.0	48.9	50.1	49.3	
	GFDL85	45.0	48.8	55.6	54.4	
	HAD45	45.0	44.9	46.8	47.5	
	HAD85	45.0	47.4	43.1	46.1	
Growing Season May—Sep	CCSM45	22.2	20.4	21.9	21.4	
	CCSM85	22.2	21.5	20.6	20.8	
	GFDL45	22.2	24.6	23.2	23.9	
	GFDL85	22.2	24.0	26.8	25.5	
	HAD45	22.2	21.5	22.2	22.2	
	HAD85	22.2	22.9	18.7	19.6	

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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Common Name	Scientific Name	Range	MR	%Cell	FIAsum	FIAiv	ChngCl45	ChngCl85	Adap	Abund	Capabil45	Capabil85	SHIFT45	SHIFT85	SSO	N	
serviceberry	Amelanchier spp.	NSL	Low	0.9	1.6	1.4	Sm. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor				0	48
red maple	Acer rubrum	WDH	High	1.9	1.3	0.6	Lg. inc.	Lg. inc.	High	Rare	Good	Good				2	49
winged elm	Ulmus alata	WDL	Medium	0.1	0.8	0.1	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good				2	50
blackgum	Nyssa sylvatica	WDL	Medium	0.1	0.5	0.0	Lg. inc.	Lg. inc.	High	Rare	Good	Good				2	51
ashe juniper	Juniperus ashei	NDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat				0	52
shortleaf pine	Pinus echinata	WDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Likely +	Likely +		3	53
loblolly pine	Pinus taeda	WDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate ++		3	54
sugarberry	Celtis laevigata	NDH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +	Migrate ++		3	55
black ash	Fraxinus nigra	WSH	Medium	0	0	0	Unknown	New Habitat	Low	Absent	Unknown	New Habitat				3	56
sweetgum	Liquidambar styraciflua	WDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate +		3	57
bigleaf magnolia	Magnolia macrophylla	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown				0	58
bigtooth aspen	Populus grandidentata	NSL	Medium	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown				0	59
water oak	Quercus nigra	WDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate +		3	60
live oak	Quercus virginiana	NDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat				3	61
black locust	Robinia pseudoacacia	NDH	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate +		3	62
cedar elm	Ulmus crassifolia	NDH	Medium	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat	Migrate +	Migrate ++		3	63