

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
 8,724.4 3,368.5 1

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	2	5	Increase	0	0	Very Good	0	0
Hickory	0			Medium	10	16	No Change	1	1	Good	0	0
Maple	0	Abundant	0	Low	11	2	Decrease	0	0	Fair	1	1
Oak	1	Common	1	FIA	0		New	15	15	Poor	0	0
Pine	0	Rare	0				Unknown	7	7	Very Poor	0	0
Other	0	Absent	22							FIA Only	0	0
	1		23		23	23		23	23	Unknown	7	7
											8	8

Potential Changes in Climate Variables

Temperature (°F)

	Scenario	2009	2039	2069	2099	
Annual Average	CCSM45	74.0	75.3	77.0	77.5	
	CCSM85	74.0	75.8	78.0	80.5	
	GFDL45	74.0	79.6	78.5	79.9	
	GFDL85	74.0	76.6	80.0	83.5	
	HAD45	74.0	76.0	78.2	79.2	
	HAD85	74.0	76.5	79.0	82.4	
	Growing Season (May—Sep)	CCSM45	84.1	85.3	86.6	87.1
CCSM85		84.1	85.9	87.8	90.4	
GFDL45		84.1	90.8	89.3	91.0	
GFDL85		84.1	87.3	91.0	94.9	
HAD45		84.1	86.0	87.9	88.8	
HAD85		84.1	86.4	89.1	92.3	
Coldest Month (Average)		CCSM45	56.8	58.8	59.7	60.1
	CCSM85	56.8	58.9	60.0	61.4	
	GFDL45	56.8	59.8	60.3	60.3	
	GFDL85	56.8	58.4	59.6	60.5	
	HAD45	56.8	58.1	59.3	60.1	
	HAD85	56.8	60.4	61.5	63.1	
	Warmest Month (Average)	CCSM45	87.0	88.2	88.8	89.1
CCSM85		87.0	88.9	89.5	90.7	
GFDL45		87.0	90.4	91.4	92.2	
GFDL85		87.0	90.5	92.1	94.4	
HAD45		87.0	89.0	89.8	90.6	
HAD85		87.0	89.5	90.9	92.3	

Precipitation (in)

	Scenario	2009	2039	2069	2099	
Annual Total	CCSM45	21.8	23.8	23.0	21.7	
	CCSM85	21.8	23.1	23.4	21.4	
	GFDL45	21.8	21.0	23.4	18.1	
	GFDL85	21.8	21.0	20.3	18.9	
	HAD45	21.8	22.4	21.8	24.0	
Growing Season (May—Sep)	CCSM45	13.0	13.8	13.4	12.9	
	CCSM85	13.0	14.4	14.0	12.5	
	GFDL45	13.0	12.7	15.0	11.1	
	GFDL85	13.0	13.0	12.2	11.6	
	HAD45	13.0	12.4	12.0	13.7	
HAD85	13.0	14.3	13.1	12.2		

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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USDA Forest Service
Northern Research Station
Landscape Change Research Group
Iverson, Peters, Prasad, Matthews

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Common Name	Scientific Name	Range	MR	%Cell	FIAsum	FIaiv	ChngCl45	ChngCl85	Adap	Abund	Capabil45	Capabil85	SHIFT45	SHIFT85	SSO	N
live oak	Quercus virginiana	NDH	High	3.5	54.1	36.4	No change	No change	Medium	Common	Fair	Fair	Infill +	Infill +	2	1
loblolly pine	Pinus taeda	WDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	2
bald cypress	Taxodium distichum	NSH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	3
pond cypress	Taxodium ascendens	NSH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			0	4
boxelder	Acer negundo	WSH	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat			3	5
striped maple	Acer pensylvanicum	NSL	Medium	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	6
pawpaw	Asimina triloba	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	7
water hickory	Carya aquatica	NSL	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	8
bitternut hickory	Carya cordiformis	WSL	Low	0	0	0	Unknown	Unknown	High	Absent	Unknown	Unknown			0	9
sugarberry	Celtis laevigata	NDH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	10
eastern redbud	Cercis canadensis	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	11
green ash	Fraxinus pennsylvanica	WSH	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	12
honeylocust	Gleditsia triacanthos	NSH	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat			3	13
bigleaf magnolia	Magnolia macrophylla	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	14
pin cherry	Prunus pensylvanica	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	15
cherrybark oak; swamp red o.	Quercus pagoda	NSL	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	16
overcup oak	Quercus lyrata	NSL	Medium	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat			3	17
blackjack oak	Quercus marilandica	NSL	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	18
Shumard oak	Quercus shumardii	NSL	Low	0	0	0	Unknown	Unknown	High	Absent	Unknown	Unknown			0	19
cabbage palmetto	Sabal palmetto	NDH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			0	20
black willow	Salix nigra	NSH	Low	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	21
American elm	Ulmus americana	WDH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	22
slippery elm	Ulmus rubra	WSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	23