

One x One Degree
Climate Change Atlas Tree Species
 Current and Potential Future Habitat, Capability, and Migration

	sq. km	sq. mi	FIA Plots
Area of Region	3,734.6	1,441.9	7

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	5	Increase	7	10	Very Good	0	0
Hickory	2			Medium	16	24	No Change	5	5	Good	4	7
Maple	2	Abundant	0	Low	15	8	Decrease	4	1	Fair	2	3
Oak	3	Common	1	FIA	0		New	10	10	Poor	8	5
Pine	0	Rare	15				Unknown	11	11	Very Poor	2	1
Other	8	Absent	17							FIA Only	0	0
	16		33		37	37		37	37	Unknown	11	11
											27	27

Potential Changes in Climate Variables

Temperature (°F)

	Scenario	2009	2039	2069	2099	
Annual Average	CCSM45	69.5	70.8	72.4	72.5	
	CCSM85	69.5	71.0	73.2	75.1	
	GFDL45	69.5	74.3	73.6	74.3	
	GFDL85	69.5	71.7	74.6	77.8	
	HAD45	69.5	71.3	73.5	74.6	
	HAD85	69.5	71.5	74.2	77.4	
Growing Season (May—Sep)	CCSM45	80.4	81.4	82.5	82.8	
	CCSM85	80.4	81.5	83.6	85.8	
	GFDL45	80.4	85.7	84.4	85.7	
	GFDL85	80.4	82.8	85.6	89.3	
	HAD45	80.4	82.5	84.4	85.2	
	HAD85	80.4	82.6	85.8	88.5	
Coldest Month (Average)	CCSM45	52.3	54.3	55.2	55.1	
	CCSM85	52.3	54.6	55.8	56.8	
	GFDL45	52.3	55.4	55.6	55.8	
	GFDL85	52.3	53.9	55.0	55.8	
	HAD45	52.3	52.3	53.8	54.5	
	HAD85	52.3	53.7	54.8	56.4	
Warmest Month (Average)	CCSM45	83.2	84.1	84.5	84.7	
	CCSM85	83.2	84.2	85.0	86.3	
	GFDL45	83.2	85.7	86.2	87.0	
	GFDL85	83.2	85.4	86.7	88.7	
	HAD45	83.2	85.5	86.5	86.7	
	HAD85	83.2	85.6	87.3	88.4	

Precipitation (in)

	Scenario	2009	2039	2069	2099	
Annual Total	CCSM45	62.8	65.4	70.7	69.1	
	CCSM85	62.8	66.2	67.5	67.7	
	GFDL45	62.8	69.1	72.6	68.6	
	GFDL85	62.8	66.8	68.4	65.2	
	HAD45	62.8	58.1	62.1	66.3	
	HAD85	62.8	67.2	60.2	62.5	
Growing Season (May—Sep)	CCSM45	30.8	32.3	33.0	32.7	
	CCSM85	30.8	31.6	32.8	30.4	
	GFDL45	30.8	35.7	38.1	34.4	
	GFDL85	30.8	34.5	36.2	35.8	
	HAD45	30.8	29.4	30.1	31.9	
	HAD85	30.8	31.8	25.6	26.1	

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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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	9.4	69.4	22.5	Sm. dec.	No change	Medium	Common	Poor	Fair	Infill +	Infill +	2	1
American elm	Ulmus americana	WDH	Medium	13.2	37.8	19.6	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			2	2
red maple	Acer rubrum	WDH	High	10.3	28.4	9.4	Lg. inc.	Lg. inc.	High	Rare	Good	Good			2	3
black willow	Salix nigra	NSH	Low	17.9	25.1	6.9	Sm. inc.	Sm. inc.	Low	Rare	Poor	Poor	Infill +	Infill +	2	4
bald cypress	Taxodium distichum	NSH	Medium	10.3	18.1	6.3	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			2	5
sweetgum	Liquidambar styraciflua	WDH	High	5.7	12.1	9.5	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	2	6
boxelder	Acer negundo	WSH	Low	10.3	8.5	3.1	Sm. inc.	Sm. inc.	High	Rare	Good	Good			2	7
sugarberry	Celtis laevigata	NDH	Medium	5.7	5.7	4.4	Sm. inc.	Lg. inc.	Medium	Rare	Fair	Good	Infill +		2	8
pecan	Carya illinoensis	NSH	Low	5.7	4.8	3.7	Sm. dec.	Sm. inc.	Low	Rare	Very Poor	Poor		Infill +	2	9
pond cypress	Taxodium ascendens	NSH	Medium	5.7	3.5	2.8	No change	Lg. inc.	Medium	Rare	Poor	Good			2	10
water oak	Quercus nigra	WDH	High	4.7	2.9	1.9	No change	No change	Medium	Rare	Poor	Poor			0	11
water tupelo	Nyssa aquatica	NSH	Medium	4.7	1.9	1.3	Lg. inc.	Lg. inc.	Low	Rare	Fair	Fair	Infill +	Infill +	2	12
willow oak	Quercus phellos	NSL	Low	5.7	1.6	1.3	No change	Lg. inc.	Medium	Rare	Poor	Good			2	13
eastern hophornbeam; ironw	Ostrya virginiana	WSL	Low	4.7	1.2	0.8	Sm. dec.	No change	High	Rare	Poor	Fair			0	14
green ash	Fraxinus pennsylvanica	WSH	Low	4.7	0.8	0.5	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			2	15
water hickory	Carya aquatica	NSL	Medium	4.7	0.8	0.5	No change	No change	Medium	Rare	Poor	Poor			0	16
Atlantic white-cedar	Chamaecyparis thyoides	NSH	Low	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat	Migrate +		3	17
slash pine	Pinus elliottii	NDH	High	0	0	0	Unknown	Unknown	Medium	Modeled	Unknown	Unknown			0	18
loblolly pine	Pinus taeda	WDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate ++	Migrate ++	3	19
striped maple	Acer pensylvanicum	NSL	Medium	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	20
serviceberry	Amelanchier spp.	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	21
cittamwood/gum bumelia	Sideroxylon lanuginosum ssp.	NSL	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	22
American hornbeam; muscle	Carpinus caroliniana	WSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	23
pignut hickory	Carya glabra	WDL	Medium	0	0	0	Unknown	Unknown	Medium	Modeled	Unknown	Unknown			0	24
black ash	Fraxinus nigra	WSH	Medium	0	0	0	Unknown	Unknown	Low	Absent	Unknown	Unknown			0	25
silverbell	Halesia spp.	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	26
black walnut	Juglans nigra	WDH	Low	0	0	0	Unknown	Unknown	Medium	Modeled	Unknown	Unknown			0	27
bigleaf magnolia	Magnolia macrophylla	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	28
swamp tupelo	Nyssa biflora	NDH	Medium	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat			3	29
pin cherry	Prunus pensylvanica	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	30
cherrybark oak; swamp red o.	Quercus pagoda	NSL	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate +	3	31
overcup oak	Quercus lyrata	NSL	Medium	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat		Migrate +	3	32
nuttall oak	Quercus texana	NSH	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat			0	33
cabbage palmetto	Sabal palmetto	NDH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			0	34
sassafras	Sassafras albidum	WSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	35
winged elm	Ulmus alata	WDL	Medium	0	0	0	Unknown	Unknown	Medium	Modeled	Unknown	Unknown			0	36
cedar elm	Ulmus crassifolia	NDH	Medium	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat			3	37