

	sq. km	sq. mi	FIA Plots
Area of Region	10,282	3,969.8	33

**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	Rare	High	Low	Scenario	Scenario	Scenario	Scenario	SHIFT	SHIFT	
				Reliability	Adaptability	RCP45	RCP85	RCP45	RCP85	RCP45	RCP85	
Ash	0											
Hickory	0											
Maple	1	Abundant	0	High	6	7	Increase	5	4	Very Good	1	1
Oak	2	Common	4	Medium	17	25	No Change	4	5	Good	2	2
Pine	2	Rare	8	Low	14	5	Decrease	3	3	Fair	4	3
Other	7	Absent	20	FIA	0		New	13	13	Poor	4	5
	<b>12</b>		<b>32</b>		<b>37</b>	<b>37</b>	Unknown	12	12	Very Poor	0	0
								<b>37</b>	<b>37</b>	FIA Only	0	0
										Unknown	12	12
											<b>23</b>	<b>23</b>

**Potential Changes in Climate Variables**

**Temperature (°F)**

	Scenario	2009	2039	2069	2099	
Annual Average	CCSM45	74.6	75.8	77.0	77.0	
	CCSM85	74.6	75.8	77.8	79.8	
	GFDL45	74.6	79.2	78.4	79.3	
	GFDL85	74.6	76.7	79.4	82.4	
	HAD45	74.6	75.9	77.8	78.8	
	HAD85	74.6	76.4	78.5	81.6	
Growing Season (May—Sep)	CCSM45	81.0	82.0	83.0	83.2	
	CCSM85	81.0	82.0	84.0	86.1	
	GFDL45	81.0	85.6	84.8	85.8	
	GFDL85	81.0	83.1	85.8	88.9	
	HAD45	81.0	82.6	84.1	85.2	
	HAD85	81.0	83.0	85.4	88.1	
Coldest Month Average	CCSM45	63.7	65.2	66.1	65.9	
	CCSM85	63.7	64.7	65.5	66.9	
	GFDL45	63.7	66.0	66.3	66.9	
	GFDL85	63.7	65.8	67.0	68.2	
	HAD45	63.7	64.1	65.2	65.6	
	HAD85	63.7	64.5	65.3	67.1	
Warmest Month Average	CCSM45	82.8	83.9	84.4	84.4	
	CCSM85	82.8	84.0	85.0	86.2	
	GFDL45	82.8	84.8	85.8	86.4	
	GFDL85	82.8	85.0	86.6	88.2	
	HAD45	82.8	84.6	85.3	85.7	
	HAD85	82.8	84.7	85.9	87.3	

**Precipitation (in)**

	Scenario	2009	2039	2069	2099	
Annual Total	CCSM45	51.0	51.1	49.9	54.8	
	CCSM85	51.0	52.2	50.1	45.6	
	GFDL45	51.0	57.3	58.1	59.3	
	GFDL85	51.0	54.5	61.6	54.5	
	HAD45	51.0	53.5	53.3	51.2	
	HAD85	51.0	47.4	49.5	46.6	
Growing Season (May—Sep)	CCSM45	32.6	32.9	31.3	34.9	
	CCSM85	32.6	33.8	32.4	27.9	
	GFDL45	32.6	34.8	34.1	32.2	
	GFDL85	32.6	33.4	34.7	29.9	
	HAD45	32.6	33.0	32.6	28.5	
	HAD85	32.6	29.3	27.8	25.3	

**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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One x One Degree  
Climate Change Atlas Tree Species

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

Current and Potential Future Habitat, Capability, and Migration

Common Name	Scientific Name	Range	MR	%Cell	FIAsum	FIAiv	ChngCl45	ChngCl85	Adap	Abund	Capabil45	Capabil85	SHIFT45	SHIFT85	SSO	N
slash pine	Pinus elliottii	NDH	High	19.4	445.1	39.2	Sm. dec.	Sm. dec.	Medium	Common	Poor	Poor	Infill +	Infill +	2	1
cabbage palmetto	Sabal palmetto	NDH	Medium	19.8	169.4	9.0	Sm. inc.	Sm. inc.	Medium	Common	Good	Good			0	2
pond cypress	Taxodium ascendens	NSH	Medium	16.7	114.2	23.5	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good	Infill ++	Infill ++	2	3
live oak	Quercus virginiana	NDH	High	7.1	87.1	9.5	No change	No change	Medium	Common	Fair	Fair	Infill +	Infill +	2	4
redbay	Persea borbonia	NSL	Low	14.8	29.4	15.1	Sm. dec.	Sm. dec.	High	Rare	Poor	Poor	Infill +	Infill +	1	5
red maple	Acer rubrum	WDH	High	6.3	19.7	5.4	No change	No change	High	Rare	Fair	Fair	Infill +	Infill +	2	6
bald cypress	Taxodium distichum	NSH	Medium	6.5	12.6	11.9	Sm. inc.	No change	Medium	Rare	Fair	Poor	Infill +	Infill +	2	7
laurel oak	Quercus laurifolia	NDH	Medium	7.7	7.4	2.0	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	2	8
sweetbay	Magnolia virginiana	NSL	Medium	3.9	1.7	7.1	No change	No change	Medium	Rare	Poor	Poor		Infill +	2	9
common persimmon	Diospyros virginiana	NSL	Low	0.4	1.5	0.7	Very Lg. dec.	Very Lg. dec.	High	Rare	Lost	Lost			0	10
sugarberry	Celtis laevigata	NDH	Medium	1	0.3	0.3	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			2	11
sand pine	Pinus clausa	NDH	High	0.1	0.2	0.0	Lg. inc.	Lg. inc.	Low	Rare	Fair	Fair	Infill +		2	12
longleaf pine	Pinus palustris	NSH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +		3	13
loblolly pine	Pinus taeda	WDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate ++	3	14
serviceberry	Amelanchier spp.	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	15
river birch	Betula nigra	NSL	Low	0	0	0	Unknown	Unknown	Medium	Modeled	Unknown	Unknown			0	16
pecan	Carya illinoensis	NSH	Low	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat			3	17
flowering dogwood	Cornus florida	WDL	Medium	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	18
green ash	Fraxinus pennsylvanica	WSH	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate +	3	19
loblolly-bay	Gordonia lasianthus	NSH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +	Migrate ++	3	20
silverbell	Halesia spp.	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	21
bigleaf magnolia	Magnolia macrophylla	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	22
eastern hophornbeam; ironw	Ostrya virginiana	WSL	Low	0	0	0	Unknown	Unknown	High	Absent	Unknown	Unknown			0	23
water elm	Planera aquatica	NSL	Low	0	0	0	Unknown	Unknown	Medium	Modeled	Unknown	Unknown			0	24
white oak	Quercus alba	WDH	Medium	0	0	0	Unknown	Unknown	High	Modeled	Unknown	Unknown			0	25
cherrybark oak; swamp red o.	Quercus pagoda	NSL	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			0	26
turkey oak	Quercus laevis	NSH	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat			3	27
overcup oak	Quercus lyrata	NSL	Medium	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat			3	28
willow oak	Quercus phellos	NSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	29
post oak	Quercus stellata	WDH	High	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat		Migrate +	3	30
black locust	Robinia pseudoacacia	NDH	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	31
black willow	Salix nigra	NSH	Low	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat		Migrate +	3	32
sassafras	Sassafras albidum	WSL	Low	0	0	0	Unknown	Unknown	Medium	Modeled	Unknown	Unknown			0	33
American basswood	Tilia americana	WSL	Medium	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	34
winged elm	Ulmus alata	WDL	Medium	0	0	0	Unknown	Unknown	Medium	Modeled	Unknown	Unknown			0	35
American elm	Ulmus americana	WDH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate +	3	36
cedar elm	Ulmus crassifolia	NDH	Medium	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat			0	37