

**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    1,118.3    431.8      37

**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	8	10	Increase	8	8	Very Good	3	5	Likely	2	2
Hickory	0		Medium	24	29	No Change	5	6	Good	7	5	Infill	3	3
Maple	1	Abundant	Low	15	8	Decrease	7	6	Fair	4	6	Migrate	8	14
Oak	2	Common	FIA	1		New	19	22	Poor	3	1		<b>13</b>	<b>19</b>
Pine	2	Rare				Unknown	9	6	Very Poor	3	3			
Other	15	Absent					<b>48</b>	<b>48</b>	FIA Only	1	1			
	<b>21</b>	<b>45</b>		<b>48</b>	<b>47</b>				Unknown	8	5			
										<b>29</b>	<b>26</b>			

**Potential Changes in Climate Variables**

**Temperature (°F)**

	Scenario	2009	2039	2069	2099	
Annual Average	CCSM45	62.0	63.4	65.0	65.1	
	CCSM85	62.0	63.7	65.7	68.1	
	GFDL45	62.0	65.0	66.6	67.5	
	GFDL85	62.0	64.6	67.7	71.0	
	HAD45	62.0	63.4	65.8	67.0	
HAD85	62.0	63.8	66.4	69.6		
Growing Season (May-Sep)	CCSM45	75.1	76.4	77.7	78.0	
	CCSM85	75.1	76.5	78.6	81.3	
	GFDL45	75.1	78.3	80.1	81.3	
	GFDL85	75.1	78.1	81.4	85.0	
	HAD45	75.1	76.9	78.8	80.0	
HAD85	75.1	76.9	79.8	82.8		
Coldest Month (Average)	CCSM45	42.1	44.4	45.1	45.5	
	CCSM85	42.1	44.5	45.4	46.8	
	GFDL45	42.1	45.2	45.6	46.4	
	GFDL85	42.1	44.0	45.1	46.2	
	HAD45	42.1	42.3	44.0	44.3	
HAD85	42.1	42.7	43.9	45.5		
Warmest Month (Average)	CCSM45	80.1	81.3	82.0	82.0	
	CCSM85	80.1	81.4	82.7	83.8	
	GFDL45	80.1	82.5	83.6	84.4	
	GFDL85	80.1	83.1	84.7	86.8	
	HAD45	80.1	81.9	83.0	83.4	
HAD85	80.1	82.2	83.7	85.3		

**Precipitation (in)**

	Scenario	2009	2039	2069	2099	
Annual Total	CCSM45	52.4	56.2	57.3	55.8	
	CCSM85	52.4	56.6	57.3	62.5	
	GFDL45	52.4	55.4	57.9	60.1	
	GFDL85	52.4	54.6	58.1	57.5	
	HAD45	52.4	55.4	53.8	53.2	
HAD85	52.4	57.0	52.5	49.5		
Growing Season (May-Sep)	CCSM45	26.2	30.6	30.6	29.9	
	CCSM85	26.2	28.8	30.2	32.7	
	GFDL45	26.2	27.2	28.7	30.4	
	GFDL85	26.2	26.6	29.3	30.0	
	HAD45	26.2	28.2	26.6	24.5	
HAD85	26.2	28.9	24.8	21.2		

**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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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
pond pine	Pinus serotina	NSH	Medium	84	4191.9	27.4	Sm. dec.	Sm. dec.	Low	Abundant	Fair	Fair			0	1
redbay	Persea borbonia	NSL	Low	98	1759.0	6.0	Sm. dec.	Sm. dec.	High	Abundant	Good	Good			1	2
swamp tupelo	Nyssa biflora	NDH	Medium	56.7	1486.8	6.8	Sm. dec.	Sm. dec.	Low	Abundant	Fair	Fair			0	3
red maple	Acer rubrum	WDH	High	70.8	1414.3	6.1	Sm. dec.	No change	High	Abundant	Good	Very Good			1	4
loblolly pine	Pinus taeda	WDH	High	52.1	1128.6	4.3	Lg. inc.	Lg. inc.	Medium	Abundant	Very Good	Very Good			1	5
loblolly-bay	Gordonia lasianthus	NSH	Medium	49.5	825.4	10.2	No change	No change	Medium	Abundant	Good	Good			1	6
sweetbay	Magnolia virginiana	NSL	Medium	53.5	540.1	3.3	No change	No change	Medium	Abundant	Good	Good			1	7
Atlantic white-cedar	Chamaecyparis thyoides	NSH	Low	29.4	484.0	4.4	Lg. dec.	Lg. dec.	Low	Common	Very Poor	Very Poor			0	8
sweetgum	Liquidambar styraciflua	WDH	High	34.8	483.8	2.5	Sm. inc.	Lg. inc.	Medium	Common	Good	Very Good			1	9
laurel oak	Quercus laurifolia	NDH	Medium	5.3	222.7	1.3	No change	No change	Medium	Common	Fair	Fair			1	10
bald cypress	Taxodium distichum	NSH	Medium	16.6	185.4	1.9	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good			1	11
pond cypress	Taxodium ascendens	NSH	Medium	6.8	76.0	0.7	No change	No change	Medium	Common	Fair	Fair	Infill +	Infill +	1	12
American holly	Ilex opaca	NSL	Medium	23.4	65.8	0.7	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good			1	13
American hornbeam; muscle	Carpinus caroliniana	WSL	Low	2.2	25.8	0.6	No change	No change	Medium	Rare	Poor	Poor			2	14
water tupelo	Nyssa aquatica	NSH	Medium	2.8	22.5	0.7	Sm. inc.	Lg. inc.	Low	Rare	Poor	Fair	Infill +	Infill +	2	15
blackgum	Nyssa sylvatica	WDL	Medium	12.2	15.0	0.5	Lg. inc.	Lg. inc.	High	Rare	Good	Good			1	16
flowering dogwood	Cornus florida	WDL	Medium	2.2	10.3	0.3	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	17
black willow	Salix nigra	NSH	Low	2.4	8.2	0.2	Sm. inc.	Lg. inc.	Low	Rare	Poor	Fair	Infill +	Infill +	2	18
water oak	Quercus nigra	WDH	High	2.6	5.4	0.2	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			2	19
pumpkin ash	Fraxinus profunda	NSH	FIA	2.8	3.8	0.1	Unknown	Unknown	NA	Rare	FIA Only	FIA Only			0	20
eastern redcedar	Juniperus virginiana	WDH	Medium	2.8	3.0	0.1	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	21
sand pine	Pinus clausa	NDH	High	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat			0	22
slash pine	Pinus elliotii	NDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate ++	Migrate ++	3	23
spruce pine	Pinus glabra	NSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	24
longleaf pine	Pinus palustris	NSH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate ++	Migrate ++	3	25
serviceberry	Amelanchier spp.	NSL	Low	0	0	0	Unknown	New Habitat	Medium	Absent	Unknown	New Habitat			3	26
pawpaw	Asimina triloba	NSL	Low	0	0	0	Unknown	Unknown	Medium	Modeled	Unknown	Unknown			0	27
water hickory	Carya aquatica	NSL	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate +	3	28
mockernut hickory	Carya alba	WDL	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	29
sugarberry	Celtis laevigata	NDH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate +	3	30
green ash	Fraxinus pennsylvanica	WSH	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate ++	Migrate ++	3	31
yellow-poplar	Liriodendron tulipifera	WDH	High	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Likely +	Likely +	3	32
southern magnolia	Magnolia grandiflora	NSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	33
bigleaf magnolia	Magnolia macrophylla	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	34
eastern hornbeam; ironw	Ostrya virginiana	WSL	Low	0	0	0	Unknown	New Habitat	High	Absent	Unknown	New Habitat			3	35
black cherry	Prunus serotina	WDL	Medium	0	0	0	Unknown	New Habitat	Low	Absent	Unknown	New Habitat		Migrate ++	3	36
white oak	Quercus alba	WDH	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	37
swamp white oak	Quercus bicolor	NSL	Low	0	0	0	Unknown	Unknown	Medium	Modeled	Unknown	Unknown			0	38
southern red oak	Quercus falcata	WDL	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat		Migrate +	3	39
cherrybark oak; swamp red o	Quercus pagoda	NSL	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate +	3	40
turkey oak	Quercus laevis	NSH	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	41
blackjack oak	Quercus marilandica	NSL	Medium	0	0	0	Unknown	Unknown	High	Modeled	Unknown	Unknown			0	42
swamp chestnut oak	Quercus michauxii	NSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate +	3	43
willow oak	Quercus phellos	NSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	44
live oak	Quercus virginiana	NDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Likely +	Likely +	3	45
bluejack oak	Quercus incana	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			2	46
American elm	Ulmus americana	WDH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	47

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cedar elm	Ulmus crassifolia	NDH	Medium	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat				0 48