

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 10,948 4,227.1 112

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	9	Increase	7	Very Good	2	Likely	1
Hickory	2			Medium	21	No Change	11	Good	5	Infill	7
Maple	1	Abundant	2	Low	13	Decrease	8	Fair	6	Migrate	4
Oak	6	Common	9	FIA	1	New	8	Poor	6		6
Pine	2	Rare	16			Unknown	10	Very Poor	6		6
Other	15	Absent	12				9	FIA Only	1		1
	27		39		44		44	Unknown	9		8
									35		34

Potential Changes in Climate Variables

Temperature (°F)

	Scenario	2009	2039	2069	2099	
Annual Average	CCSM45	72.6	74.0	75.5	75.4	
	CCSM85	72.6	74.1	76.3	78.5	
	GFDL45	72.6	76.9	76.6	77.5	
	GFDL85	72.6	74.8	77.7	80.9	
	HAD45	72.6	74.0	76.0	77.1	
	HAD85	72.6	74.6	76.8	80.1	
Growing Season (May—Sep)	CCSM45	80.3	81.6	82.8	82.9	
	CCSM85	80.3	81.6	83.8	86.3	
	GFDL45	80.3	84.7	84.3	85.4	
	GFDL85	80.3	82.6	85.4	88.8	
	HAD45	80.3	82.3	83.9	85.0	
	HAD85	80.3	82.6	85.3	88.3	
Coldest Month (Average)	CCSM45	59.9	61.8	62.7	62.4	
	CCSM85	59.9	61.2	62.1	63.6	
	GFDL45	59.9	62.4	62.9	63.4	
	GFDL85	59.9	62.2	63.3	64.5	
	HAD45	59.9	60.0	61.1	61.6	
	HAD85	59.9	60.7	61.4	63.2	
Warmest Month (Average)	CCSM45	82.2	83.4	84.2	84.1	
	CCSM85	82.2	83.5	84.8	86.3	
	GFDL45	82.2	84.4	85.4	86.0	
	GFDL85	82.2	84.6	86.2	88.0	
	HAD45	82.2	84.2	84.9	85.4	
	HAD85	82.2	84.3	85.7	87.1	

Precipitation (in)

	Scenario	2009	2039	2069	2099	
Annual Total	CCSM45	48.7	51.1	50.2	53.9	
	CCSM85	48.7	50.7	50.3	48.1	
	GFDL45	48.7	56.4	58.0	60.0	
	GFDL85	48.7	53.0	61.8	56.2	
	HAD45	48.7	50.4	50.7	51.2	
	HAD85	48.7	46.4	48.9	47.2	
Growing Season (May—Sep)	CCSM45	32.1	34.2	32.7	35.5	
	CCSM85	32.1	33.8	33.6	30.5	
	GFDL45	32.1	36.1	36.4	35.8	
	GFDL85	32.1	34.6	38.4	34.2	
	HAD45	32.1	32.8	33.1	30.7	
	HAD85	32.1	30.4	28.7	27.8	

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
slash pine	Pinus elliottii	NDH	High	60.9	819.7	26.3	Sm. inc.	No change	Medium	Abundant	Very Good	Good			1	1
live oak	Quercus virginiana	NDH	High	73.3	638.4	16.6	No change	Sm. inc.	Medium	Abundant	Good	Very Good			1	2
cabbage palmetto	Sabal palmetto	NDH	Medium	50.8	392.9	16.0	Sm. inc.	Sm. inc.	Medium	Common	Good	Good			0	3
longleaf pine	Pinus palustris	NSH	Medium	18.8	234.7	21.6	Sm. dec.	Sm. dec.	Medium	Common	Poor	Poor			0	4
laurel oak	Quercus laurifolia	NDH	Medium	51.6	192.6	6.8	No change	No change	Medium	Common	Fair	Fair			1	5
pond cypress	Taxodium ascendens	NSH	Medium	7.8	192.3	19.7	No change	No change	Medium	Common	Fair	Fair	Infill +	Infill +	1	6
red maple	Acer rubrum	WDH	High	36.3	175.9	9.9	Sm. inc.	No change	High	Common	Very Good	Good			1	7
bald cypress	Taxodium distichum	NSH	Medium	18.3	151.2	16.7	No change	No change	Medium	Common	Fair	Fair			1	8
water oak	Quercus nigra	WDH	High	23.5	86.7	9.9	Sm. inc.	Sm. inc.	Medium	Common	Good	Good			1	9
redbay	Persea borbonia	NSL	Low	13	71.3	8.8	No change	No change	High	Common	Good	Good			1	10
sweetbay	Magnolia virginiana	NSL	Medium	25.4	52.2	8.3	Sm. inc.	Sm. inc.	Medium	Common	Good	Good			1	11
swamp tupelo	Nyssa biflora	NDH	Medium	20.7	40.4	6.0	Lg. inc.	Lg. inc.	Low	Rare	Fair	Fair			1	12
American elm	Ulmus americana	WDH	Medium	14.7	33.6	5.3	Sm. inc.	Sm. inc.	Medium	Rare	Fair	Fair	Infill +	Infill +	1	13
loblolly-bay	Gordonia lasianthus	NSH	Medium	5.6	29.1	8.4	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	1	14
sweetgum	Liquidambar styraciflua	WDH	High	4.6	22.7	5.0	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	2	15
Carolina ash	Fraxinus caroliniana	NSL	FIA	20	20.2	6.4	Unknown	Unknown	NA	Rare	FIA Only	FIA Only			0	16
common persimmon	Diospyros virginiana	NSL	Low	6.6	13.7	3.5	Lg. dec.	Lg. dec.	High	Rare	Poor	Poor			1	17
turkey oak	Quercus laevis	NSH	Medium	5.8	13.4	6.9	No change	No change	High	Rare	Fair	Fair	Infill +	Infill +	2	18
water hickory	Carya aquatica	NSL	Medium	2.5	7.9	2.6	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	19
sugarberry	Celtis laevigata	NDH	Medium	9.1	7.2	4.9	No change	Lg. inc.	Medium	Rare	Poor	Good	Infill +	Infill ++	2	20
black cherry	Prunus serotina	WDL	Medium	5.4	5.7	3.4	No change	No change	Low	Rare	Very Poor	Very Poor			2	21
red mulberry	Morus rubra	NSL	Low	1.8	2.6	1.4	Sm. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	22
pignut hickory	Carya glabra	WDL	Medium	0.9	1.3	1.4	Sm. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			2	23
bluejack oak	Quercus incana	NSL	Low	1.4	0.9	1.5	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	24
black willow	Salix nigra	NSH	Low	1.4	0.8	1.4	Sm. dec.	Sm. dec.	Low	Rare	Very Poor	Very Poor			0	25
willow oak	Quercus phellos	NSL	Low	4.6	0.8	0.6	Very Lg. dec.	Very Lg. dec.	Medium	Rare	Lost	Lost			0	26
American hornbeam; musclev	Carpinus caroliniana	WSL	Low	0.9	0.6	0.7	No change	No change	Medium	Rare	Poor	Poor	Infill +		2	27
sand pine	Pinus clausa	NDH	High	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat	Migrate ++	Migrate ++	3	28
shortleaf pine	Pinus echinata	WDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	29
pond pine	Pinus serotina	NSH	Medium	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat	Migrate ++	Migrate ++	3	30
loblolly pine	Pinus taeda	WDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +	Migrate ++	3	31
striped maple	Acer pensylvanicum	NSL	Medium	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	32
flowering dogwood	Cornus florida	WDL	Medium	0	0	0	Unknown	Unknown	Medium	Modeled	Unknown	Unknown			0	33
green ash	Fraxinus pennsylvanica	WSH	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Likely +	Likely +	3	34
American holly	Ilex opaca	NSL	Medium	0	0	0	Unknown	Unknown	Medium	Modeled	Unknown	Unknown			0	35
cucumbertree	Magnolia acuminata	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	36
blackgum	Nyssa sylvatica	WDL	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	37
eastern hophornbeam; ironw	Ostrya virginiana	WSL	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat			3	38
cherrybark oak; swamp red o	Quercus pagoda	NSL	Medium	0	0	0	Unknown	Unknown	Medium	Modeled	Unknown	Unknown			0	39
Shumard oak	Quercus shumardii	NSL	Low	0	0	0	Unknown	Unknown	High	Modeled	Unknown	Unknown			0	40
post oak	Quercus stellata	WDH	High	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat		Migrate +	3	41
black locust	Robinia pseudoacacia	NDH	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	42
American mountain-ash	Sorbus americana	NSL	Low	0	0	0	Unknown	New Habitat	Low	Absent	Unknown	New Habitat			0	43
winged elm	Ulmus alata	WDL	Medium	0	0	0	Unknown	Unknown	Medium	Modeled	Unknown	Unknown			0	44

