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

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	sq. km	sq. mi	FIA Plots
Area of Region	10,850	4,189.2	164

Species Information

The columns below provide breif 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
Ash	4
Hickory	2
Maple	1
Oak	6
Pine	5
Other	19
	37

Abundance	
Abundant	2
Common	14
Rare	21
Absent	13
	50

	Model Reliability	Adaptability
High	10	10
Medium	27	35
Low	16	8
FIA	2	
	55	**53**

Potential Change in Habitat Suitability	Scenario RCP45	Scenario RCP85
Increase	13	14
No Change	10	11
Decrease	12	10
New	4	5
Unknown	16	15
	55	**55**

Capability to Cope or Persist	Scenario RCP45	Scenario RCP85
Very Good	3	5
Good	11	8
Fair	5	7
Poor	6	7
Very Poor	9	6
FIA Only	2	2
Unknown	14	13
	50	**48**

Migration Potential	SHIFT RCP45	SHIFT RCP85
Likely	0	0
Infill	8	10
Migrate	0	3
	8	**13**

Potential Changes in Climate Variables

Temperature (°F)

	Scenario	2009	2039	2069	2099
Annual Average	CCSM45	72.0	73.5	74.9	74.9
	CCSM85	72.0	73.6	75.7	77.9
	GFDL45	72.0	75.5	76.2	77.0
	GFDL85	72.0	74.3	77.2	80.5
	HAD45	72.0	73.5	75.7	76.8
	HAD85	72.0	74.2	76.4	79.8
Growing Season May—Sep	CCSM45	80.5	81.7	82.8	83.0
	CCSM85	80.5	81.7	83.9	86.3
	GFDL45	80.5	83.9	84.4	85.5
	GFDL85	80.5	82.8	85.6	89.1
	HAD45	80.5	82.6	84.3	85.5
	HAD85	80.5	83.0	85.8	88.9
Coldest Month Average	CCSM45	58.2	60.3	61.2	61.0
	CCSM85	58.2	59.7	60.6	62.0
	GFDL45	58.2	60.9	61.3	61.8
	GFDL85	58.2	60.5	61.7	62.8
	HAD45	58.2	58.1	59.3	59.9
	HAD85	58.2	58.8	59.5	61.4
Warmest Month Average	CCSM45	82.5	83.7	84.5	84.5
	CCSM85	82.5	83.8	85.1	86.5
	GFDL45	82.5	84.8	85.6	86.3
	GFDL85	82.5	84.9	86.4	88.3
	HAD45	82.5	84.8	85.5	86.1
	HAD85	82.5	84.7	86.4	87.7

Precipitation (in)

	Scenario	2009	2039	2069	2099
Annual Total	CCSM45	49.9	53.1	53.7	55.5
	CCSM85	49.9	52.4	52.7	51.9
	GFDL45	49.9	58.7	60.1	62.1
	GFDL85	49.9	54.1	63.4	59.7
	HAD45	49.9	49.6	49.0	51.5
	HAD85	49.9	47.1	48.1	46.2
Growing Season May—Sep	CCSM45	31.2	33.7	32.7	34.3
	CCSM85	31.2	33.0	32.9	30.9
	GFDL45	31.2	36.3	36.7	36.8
	GFDL85	31.2	34.4	38.9	36.5
	HAD45	31.2	31.2	30.4	29.1
	HAD85	31.2	28.6	26.3	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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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	53.4	1378.6	24.6	No change	No change	Medium	Abundant	Good	Good			1	1
pond cypress	Taxodium ascendens	NSH	Medium	38.6	767.5	25.6	Sm. inc.	Sm. inc.	Medium	Abundant	Very Good	Very Good			1	2
cabbage palmetto	Sabal palmetto	NDH	Medium	30.7	491.1	16.7	Sm. inc.	Lg. inc.	Medium	Common	Good	Very Good			0	3
red maple	Acer rubrum	WDH	High	50	444.0	12.2	No change	No change	High	Common	Good	Good			1	4
longleaf pine	Pinus palustris	NSH	Medium	34.3	407.4	22.0	Sm. inc.	No change	Medium	Common	Good	Fair			1	5
sand pine	Pinus clausa	NDH	High	18.8	367.5	29.5	Sm. dec.	Sm. dec.	Low	Common	Poor	Poor			0	6
live oak	Quercus virginiana	NDH	High	41.2	322.2	11.3	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good			1	7
swamp tupelo	Nyssa biflora	NDH	Medium	46.7	258.8	7.4	Sm. inc.	Sm. inc.	Low	Common	Fair	Fair			1	8
laurel oak	Quercus laurifolia	NDH	Medium	52.4	243.3	7.3	Sm. inc.	Sm. inc.	Medium	Common	Good	Good			1	9
loblolly-bay	Gordonia lasianthus	NSH	Medium	35.4	203.0	8.3	No change	No change	Medium	Common	Fair	Fair			1	10
bald cypress	Taxodium distichum	NSH	Medium	18.5	177.8	7.2	Sm. inc.	Sm. inc.	Medium	Common	Good	Good			1	11
sweetgum	Liquidambar styraciflua	WDH	High	13.3	143.2	5.5	No change	No change	Medium	Common	Fair	Fair	Infill +	Infill +	1	12
sweetbay	Magnolia virginiana	NSL	Medium	36.5	109.1	6.5	Sm. inc.	Sm. inc.	Medium	Common	Good	Good			1	13
redbay	Persea borbonia	NSL	Low	35.9	84.8	2.5	No change	Sm. inc.	High	Common	Good	Very Good			1	14
pond pine	Pinus serotina	NSH	Medium	13.5	57.4	12.5	Sm. inc.	Sm. inc.	Low	Common	Fair	Fair			1	15
water oak	Quercus nigra	WDH	High	16	53.9	2.8	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good	Infill ++	Infill ++	1	16
pumpkin ash	Fraxinus profunda	NSH	FIA	3.4	33.4	8.9	Unknown	Unknown	NA	Rare	FIA Only	FIA Only			0	17
loblolly pine	Pinus taeda	WDH	High	5.3	32.7	5.8	No change	Sm. inc.	Medium	Rare	Poor	Fair	Infill +	Infill +	2	18
turkey oak	Quercus laevis	NSH	Medium	8.4	29.8	5.0	No change	No change	High	Rare	Fair	Fair	Infill +	Infill +	1	19
green ash	Fraxinus pennsylvanica	WSH	Low	3.2	27.2	3.2	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	2	20
American elm	Ulmus americana	WDH	Medium	16.4	24.3	1.6	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good	Infill ++	Infill ++	1	21
common persimmon	Diospyros virginiana	NSL	Low	8.8	17.5	1.2	Lg. dec.	Lg. dec.	High	Rare	Poor	Poor			1	22
pignut hickory	Carya glabra	WDL	Medium	5.5	16.8	7.2	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			2	23
Carolina ash	Fraxinus caroliniana	NSL	FIA	10.8	13.2	3.5	Unknown	Unknown	NA	Rare	FIA Only	FIA Only			0	24
American hornbeam; muscle	Carpinus caroliniana	WSL	Low	3.8	11.9	1.5	Sm. dec.	No change	Medium	Rare	Very Poor	Poor		Infill +	1	25
black cherry	Prunus serotina	WDL	Medium	6.5	11.5	3.4	No change	No change	Low	Rare	Very Poor	Very Poor			0	26
southern magnolia	Magnolia grandiflora	NSL	Low	2.5	7.5	2.7	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	2	27
bluejack oak	Quercus incana	NSL	Low	3.9	5.7	2.1	Sm. dec.	No change	Medium	Rare	Very Poor	Poor		Infill +	2	28
water hickory	Carya aquatica	NSL	Medium	1.6	4.6	2.4	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	29
American holly	Ilex opaca	NSL	Medium	1.6	2.5	1.1	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	30
blackgum	Nyssa sylvatica	WDL	Medium	4.7	2.5	1.6	Lg. inc.	Lg. inc.	High	Rare	Good	Good	Infill ++	Infill ++	2	31
eastern redcedar	Juniperus virginiana	WDH	Medium	4.6	1.5	1.0	Sm. dec.	Very Lg. dec.	Medium	Rare	Very Poor	Lost			0	32
white ash	Fraxinus americana	WDL	Medium	0.9	1.4	1.6	Sm. dec.	Sm. dec.	Low	Rare	Very Poor	Very Poor			0	33
red mulberry	Morus rubra	NSL	Low	0.9	0.9	1.0	Very Lg. dec.	Very Lg. dec.	Medium	Rare	Lost	Lost			0	34
black willow	Salix nigra	NSH	Low	2.3	0.8	2.2	Sm. dec.	Sm. dec.	Low	Rare	Very Poor	Very Poor			0	35
sugarberry	Celtis laevigata	NDH	Medium	0.9	0.5	0.5	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			2	36
blackjack oak	Quercus marilandica	NSL	Medium	0.6	0.4	0.3	Lg. dec.	Lg. dec.	High	Rare	Poor	Poor			0	37
shortleaf pine	Pinus echinata	WDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate +	3	38
striped maple	Acer pensylvanicum	NSL	Medium	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	39
serviceberry	Amelanchier spp.	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	40
river birch	Betula nigra	NSL	Low	0	0	0	Unknown	Unknown	Medium	Modeled	Unknown	Unknown			0	41
shagbark hickory	Carya ovata	WSL	Medium	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	42
mockernut hickory	Carya alba	WDL	Medium	0	0	0	Unknown	Unknown	High	Modeled	Unknown	Unknown			0	43
silverbell	Halesia spp.	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	44
cucumbertree	Magnolia acuminata	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	45
bigleaf magnolia	Magnolia macrophylla	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	46
water tupelo	Nyssa aquatica	NSH	Medium	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat			3	47

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sourwood	Oxydendrum arboreum	NDL	High	0	0	0	Unknown	Unknown	High	Absent	Unknown	Unknown			0	48
southern red oak	Quercus falcata	WDL	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat		Migrate +	3	49
cherrybark oak; swamp red o	Quercus pagoda	NSL	Medium	0	0	0	Unknown	Unknown	Medium	Modeled	Unknown	Unknown			0	50
willow oak	Quercus phellos	NSL	Low	0	0	0	Unknown	Unknown	Medium	Modeled	Unknown	Unknown			0	51
post oak	Quercus stellata	WDH	High	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat		Migrate +	3	52
black locust	Robinia pseudoacacia	NDH	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	53
American mountain-ash	Sorbus americana	NSL	Low	0	0	0	Unknown	New Habitat	Low	Absent	Unknown	New Habitat			0	54
winged elm	Ulmus alata	WDL	Medium	0	0	0	Unknown	Unknown	Medium	Modeled	Unknown	Unknown			0	55