S33 E78

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	1,717.7	663.2	51

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	1
Hickory	3
Maple	1
Oak	11
Pine	4
Other	22
	42

Abundance	
Abundant	7
Common	16
Rare	19
Absent	13
	55

	Model Reliability	Adaptability
High	10	16
Medium	28	36
Low	23	9
FIA	1	
	62	**61**

Potential Change in Habitat Suitability	Scenario RCP45	Scenario RCP85
Increase	20	23
No Change	11	9
Decrease	10	9
New	7	7
Unknown	14	14
	62	**62**

Capability to Cope or Persist	Scenario RCP45	Scenario RCP85
Very Good	11	11
Good	11	13
Fair	4	6
Poor	9	6
Very Poor	3	2
FIA Only	1	1
Unknown	13	13
	52	**52**

Migration Potential	SHIFT RCP45	SHIFT RCP85
Likely	1	1
Infill	11	11
Migrate	3	4
	15	**16**

Potential Changes in Climate Variables

Temperature (°F)

	Scenario	2009	2039	2069	2099
Annual Average	CCSM45	63.2	64.6	66.4	66.4
	CCSM85	63.2	64.9	67.0	69.4
	GFDL45	63.2	66.0	67.8	68.6
	GFDL85	63.2	65.7	68.8	72.2
	HAD45	63.2	64.9	67.3	68.7
	HAD85	63.2	65.3	68.2	71.7
Growing Season May—Sep	CCSM45	76.1	77.3	78.7	79.1
	CCSM85	76.1	77.4	79.6	82.4
	GFDL45	76.1	78.9	80.8	82.0
	GFDL85	76.1	78.8	82.1	85.8
	HAD45	76.1	78.3	80.3	81.7
	HAD85	76.1	78.3	81.9	85.3
Coldest Month Average	CCSM45	43.9	46.2	46.9	46.9
	CCSM85	43.9	45.9	46.9	48.1
	GFDL45	43.9	46.8	47.2	47.8
	GFDL85	43.9	45.7	46.8	47.7
	HAD45	43.9	44.0	45.7	46.2
	HAD85	43.9	44.7	45.7	47.3
Warmest Month Average	CCSM45	80.7	82.1	82.9	82.9
	CCSM85	80.7	82.3	83.6	84.9
	GFDL45	80.7	82.9	83.8	84.7
	GFDL85	80.7	83.4	85.0	87.1
	HAD45	80.7	83.1	84.2	84.7
	HAD85	80.7	83.4	85.4	87.2

Precipitation (in)

	Scenario	2009	2039	2069	2099
Annual Total	CCSM45	52.1	57.2	57.9	59.2
	CCSM85	52.1	56.9	58.2	62.5
	GFDL45	52.1	57.1	59.9	62.8
	GFDL85	52.1	55.6	62.8	60.8
	HAD45	52.1	54.0	54.7	54.2
	HAD85	52.1	56.7	52.6	51.8
Growing Season May—Sep	CCSM45	27.2	32.7	32.5	32.8
	CCSM85	27.2	29.6	31.7	33.4
	GFDL45	27.2	30.9	32.6	34.0
	GFDL85	27.2	29.7	35.5	34.5
	HAD45	27.2	27.1	27.5	26.4
	HAD85	27.2	29.1	25.0	22.2

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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Common Name	Scientific Name	Range	MR	%Cell	FIAsum	FIAiv	ChngCl45	ChngCl85	Adap	Abund	Capabil45	Capabil85	SHIFT45	SHIFT85	SSO	N
loblolly pine	Pinus taeda	WDH	High	91.7	5336.0	21.6	No change	No change	Medium	Abundant	Good	Good			1	1
red maple	Acer rubrum	WDH	High	75.9	1284.3	6.6	No change	No change	High	Abundant	Very Good	Very Good			1	2
sweetgum	Liquidambar styraciflua	WDH	High	81.4	1059.8	5.4	Sm. inc.	Sm. inc.	Medium	Abundant	Very Good	Very Good			1	3
pond pine	Pinus serotina	NSH	Medium	34.5	1014.5	10.9	Sm. dec.	Sm. dec.	Low	Abundant	Fair	Fair			0	4
swamp tupelo	Nyssa biflora	NDH	Medium	75	947.9	5.8	Sm. inc.	Sm. inc.	Low	Abundant	Good	Good			1	5
longleaf pine	Pinus palustris	NSH	Medium	27.9	638.5	6.9	Lg. inc.	Lg. inc.	Medium	Abundant	Very Good	Very Good			1	6
laurel oak	Quercus laurifolia	NDH	Medium	61	548.9	4.3	Sm. inc.	Sm. inc.	Medium	Abundant	Very Good	Very Good			1	7
loblolly-bay	Gordonia lasianthus	NSH	Medium	33.5	490.0	6.2	Sm. dec.	Sm. dec.	Medium	Common	Poor	Poor			0	8
slash pine	Pinus elliottii	NDH	High	8.5	428.6	12.8	Sm. inc.	Sm. inc.	Medium	Common	Good	Good	Infill ++	Infill ++	1	9
live oak	Quercus virginiana	NDH	High	26.8	308.3	5.6	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good			1	10
yellow-poplar	Liriodendron tulipifera	WDH	High	29.2	266.3	4.3	Lg. dec.	Lg. dec.	High	Common	Fair	Fair			1	11
water oak	Quercus nigra	WDH	High	49.9	244.8	1.4	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good			1	12
turkey oak	Quercus laevis	NSH	Medium	11.1	224.3	5.2	No change	Sm. dec.	High	Common	Good	Fair	Infill ++	Infill +	1	13
redbay	Persea borbonia	NSL	Low	56.2	199.4	1.1	Sm. inc.	Sm. inc.	High	Common	Very Good	Very Good			1	14
green ash	Fraxinus pennsylvanica	WSH	Low	39.3	153.4	2.0	Sm. inc.	Sm. inc.	Medium	Common	Good	Good			1	15
American holly	Ilex opaca	NSL	Medium	61.5	150.2	1.1	No change	No change	Medium	Common	Fair	Fair			1	16
bald cypress	Taxodium distichum	NSH	Medium	33.4	121.3	1.8	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good			1	17
water tupelo	Nyssa aquatica	NSH	Medium	14.8	118.2	5.6	No change	No change	Low	Common	Poor	Poor	Infill +		0	18
sweetbay	Magnolia virginiana	NSL	Medium	59.2	94.8	0.8	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good			1	19
willow oak	Quercus phellos	NSL	Low	34	88.1	1.5	Sm. inc.	Sm. inc.	Medium	Common	Good	Good			1	20
pond cypress	Taxodium ascendens	NSH	Medium	15	84.9	4.5	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good	Infill ++	Infill ++	1	21
white oak	Quercus alba	WDH	Medium	4.8	68.9	0.3	No change	No change	High	Common	Good	Good	Infill ++	Infill ++	2	22
blackgum	Nyssa sylvatica	WDL	Medium	20.7	63.6	0.6	Lg. inc.	Lg. inc.	High	Common	Very Good	Very Good			1	23
American hornbeam; muscle	Carpinus caroliniana	WSL	Low	14.7	46.4	1.6	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			1	24
American elm	Ulmus americana	WDH	Medium	13	44.3	0.9	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good	Infill ++	Infill ++	1	25
Atlantic white-cedar	Chamaecyparis thyoides	NSH	Low	1.3	41.2	1.5	Sm. dec.	Sm. dec.	Low	Rare	Very Poor	Very Poor			0	26
swamp chestnut oak	Quercus michauxii	NSL	Low	11.7	33.5	2.9	Sm. dec.	No change	Medium	Rare	Very Poor	Poor			1	27
sand hickory	Carya pallida	NSL	FIA	4.7	27.7	3.8	Unknown	Unknown	NA	Rare	FIA Only	FIA Only			0	28
black cherry	Prunus serotina	WDL	Medium	17.6	24.4	0.9	Sm. inc.	Lg. inc.	Low	Rare	Poor	Fair			1	29
southern red oak	Quercus falcata	WDL	Medium	7.7	22.0	0.3	Sm. inc.	Lg. inc.	High	Rare	Good	Good	Infill ++	Infill ++	2	30
post oak	Quercus stellata	WDH	High	16.6	20.8	0.6	Lg. dec.	Lg. inc.	High	Rare	Poor	Good		Infill ++	1	31
bluejack oak	Quercus incana	NSL	Low	5.2	16.9	0.5	Very Lg. dec.	Very Lg. dec.	Medium	Rare	Lost	Lost			0	32
flowering dogwood	Cornus florida	WDL	Medium	5.2	10.1	0.4	No change	No change	Medium	Rare	Poor	Poor			1	33
common persimmon	Diospyros virginiana	NSL	Low	1	7.0	0.2	Very Lg. dec.	Very Lg. dec.	High	Rare	Lost	Lost			0	34
pignut hickory	Carya glabra	WDL	Medium	2	6.2	0.4	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	2	35
eastern redcedar	Juniperus virginiana	WDH	Medium	3.5	4.5	0.1	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	2	36
mockernut hickory	Carya alba	WDL	Medium	5.8	3.5	0.6	Lg. inc.	Lg. inc.	High	Rare	Good	Good	Infill ++	Infill ++	1	37
slippery elm	Ulmus rubra	WSL	Low	4.5	3.5	0.5	Very Lg. dec.	Very Lg. dec.	Medium	Rare	Lost	Lost			0	38
cherrybark oak; swamp red o	Quercus pagoda	NSL	Medium	5.8	3.1	0.5	No change	Sm. inc.	Medium	Rare	Poor	Fair	Infill +	Infill +	2	39
sugarberry	Celtis laevigata	NDH	Medium	6.6	2.7	0.1	Sm. inc.	Lg. inc.	Medium	Rare	Fair	Good			2	40
serviceberry	Amelanchier spp.	NSL	Low	5.8	2.0	0.3	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	41
winged elm	Ulmus alata	WDL	Medium	5.8	1.1	0.2	No change	Lg. inc.	Medium	Rare	Poor	Good			2	42
sand pine	Pinus clausa	NDH	High	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat			3	43
florida maple	Acer barbatum	NSL	Low	0	0	0	Unknown	Unknown	High	Modeled	Unknown	Unknown			0	44
pawpaw	Asimina triloba	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	45
river birch	Betula nigra	NSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate ++	3	46
bitternut hickory	Carya cordiformis	WSL	Low	0	0	0	Unknown	Unknown	High	Modeled	Unknown	Unknown			0	47

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pecan	Carya illinoinensis	NSH	Low	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	48
honeylocust	Gleditsia triacanthos	NSH	Low	0	0	0	Unknown	Unknown	High	Modeled	Unknown	Unknown			0	49
silverbell	Halesia spp.	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	50
Osage-orange	Maclura pomifera	NDH	Medium	0	0	0	Unknown	Unknown	High	Absent	Unknown	Unknown			0	51
cucumbertree	Magnolia acuminata	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	52
southern magnolia	Magnolia grandiflora	NSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	53
red mulberry	Morus rubra	NSL	Low	0	0	0	Unknown	Unknown	Medium	Modeled	Unknown	Unknown			0	54
swamp white oak	Quercus bicolor	NSL	Low	0	0	0	Unknown	Unknown	Medium	Modeled	Unknown	Unknown			0	55
overcup oak	Quercus lyrata	NSL	Medium	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat	Migrate ++	Migrate ++	3	56
chestnut oak	Quercus prinus	NDH	High	0	0	0	Unknown	Unknown	High	Absent	Unknown	Unknown			0	57
northern red oak	Quercus rubra	WDH	Medium	0	0	0	Unknown	Unknown	High	Modeled	Unknown	Unknown			0	58
black locust	Robinia pseudoacacia	NDH	Low	0	0	0	Unknown	Unknown	Medium	Modeled	Unknown	Unknown			0	59
cabbage palmetto	Sabal palmetto	NDH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			0	60
black willow	Salix nigra	NSH	Low	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat	Likely +	Likely +	3	61
American basswood	Tilia americana	WSL	Medium	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	62