S32 E94

	sq. km	sq. mi	FIA Plots
Area of Region	10,421	4,023.6	295

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					Model		Potential Change in Habitat Suitability		Capability to Cope or Persist		Migration Potential	
								Scenario	Scenario		Scenario	Scenario	SHIFT	SHIFT
Ash	2					Reliability	Adaptability	RCP45	RCP85		RCP45	RCP85	RCP45	RCP85
Hickory	7	Abundance												
Maple	3	Abundant	5	High	13	23	Increase	29	30	Very Good	12	12	Likely	2	3
Oak	14	Common	20	Medium	33	48	No Change	8	12	Good	14	15	Infill	7	5
Pine	3	Rare	38	Low	31	8	Decrease	24	19	Fair	8	9	Migrate	2	2
Other	34	Absent	15	FIA	2		New	6	8	Poor	11	13		11	10
	63		78		79	79	Unknown	12	10	Very Good	15	11			
								79	79	FIA Only	2	2			
										Unknown	10	8			
											72	70			

Potential Changes in Climate Variables

Temperature (°F)

	Scenario	2009	2039	2069	2099	
Annual	CCSM45	64.9	66.5	68.2	68.4	
Average	CCSM85	64.9	67.1	69.4	71.9	
	GFDL45	64.9	67.7	69.0	70.3	
	GFDL85	64.9	67.6	70.4	73.9	
	HAD45	64.9	67.2	70.1	71.0	
	HAD85	64.9	67.5	71.5	75.1	
Growing	CCSM45	78.6	80.1	81.4	81.8	
Season	CCSM85	78.6	81.0	83.0	86.2	
May—Sep	GFDL45	78.6	82.0	83.2	85.7	
	GFDL85	78.6	82.1	85.2	89.5	
	HAD45	78.6	81.5	84.2	84.6	
	HAD85	78.6	81.9	86.9	89.9	
Coldest	CCSM45	44.4	46.9	47.9	47.9	
Month	CCSM85	44.4	47.1	48.1	49.5	
Average	GFDL45	44.4	48.2	48.3	48.3	
	GFDL85	44.4	45.5	46.7	47.3	
	HAD45	44.4	45.2	46.9	47.5	
	HAD85	44.4	46.7	48.3	50.2	
Warmest	CCSM45	83.6	84.7	85.1	85.3	
Month	CCSM85	83.6	85.5	86.2	87.9	
Average	GFDL45	83.6	88.3	88.2	89.9	
	GFDL85	83.6	87.8	89.2	92.4	
	HAD45	83.6	87.0	88.2	88.3	
	HAD85	83.6	87.7	90.3	91.2	

Precipitation (in)

	Scenario	2009	2039	2069	2099	
Annual	CCSM45	48.7	48.9	53.4	52.5	
Total	CCSM85	48.7	49.9	53.8	53.8	
	GFDL45	48.7	51.0	59.4	51.4	
	GFDL85	48.7	50.7	54.0	54.6	
	HAD45	48.7	48.3	48.8	53.3	
	HAD85	48.7	51.7	44.7	48.3	
Growing	CCSM45	18.4	19.3	19.5	19.8	
Season	CCSM85	18.4	18.0	18.2	18.0	
May—Sep	GFDL45	18.4	20.2	24.9	20.3	
	GFDL85	18.4	20.5	22.1	22.3	
	HAD45	18.4	17.7	17.4	18.2	
	HAD85	18.4	18.6	14.2	14.8	

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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One x One Degree
Climate Change Atlas Tree Species
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
loblolly pine	Pinus taeda	WDH	High	89.9	3818.0	31.5	No change	No change	Medium	Abundant	Good	Good			1	1
sweetgum	Liquidambar styraciflua	WDH	High	94.6	1698.0	13.3	No change	No change	Medium	Abundant	Good	Good			1	2
water oak	Quercus nigra	WDH	High	80	753.0	6.7	Lg. inc.	Lg. inc.	Medium	Abundant	Very Good	Very Good			1	3
shortleaf pine	Pinus echinata	WDH	High	64.6	715.7	7.8	No change	No change	Medium	Abundant	Good	Good			1	4
southern red oak	Quercus falcata	WDL	Medium	76.3	568.0	5.7	Sm. inc.	Sm. inc.	High	Abundant	Very Good	Very Good			1	5
winged elm	Ulmus alata	WDL	Medium	80.9	471.4	4.2	Sm. inc.	Sm. inc.	Medium	Common	Good	Good			1	6
post oak	Quercus stellata	WDH	High	49.5	385.1	5.2	Lg. inc.	Lg. inc.	High	Common	Very Good	Very Good			1	7
willow oak	Quercus phellos	NSL	Low	37.2	337.6	6.6	No change	No change	Medium	Common	Fair	Fair			1	8
white oak	Quercus alba	WDH	Medium	42.1	190.5	3.0	Sm. inc.	Sm. inc.	High	Common	Very Good	Very Good			1	9
red maple	Acer rubrum	WDH	High	47.8	175.8	2.6	Sm. inc.	Lg. inc.	High	Common	Very Good	Very Good			1	10
blackgum	Nyssa sylvatica	WDL	Medium	55.9	153.5	2.1	Lg. inc.	Lg. inc.	High	Common	Very Good	Very Good			1	11
cherrybark oak; swamp red o	Quercus pagoda	NSL	Medium	34.9	144.6	2.6	Sm. inc.	Sm. inc.	Medium	Common	Good	Good			1	12
black willow	Salix nigra	NSH	Low	13.4	143.8	8.4	Sm. inc.	Sm. inc.	Low	Common	Fair	Fair			1	13
sugarberry	Celtis laevigata	NDH	Medium	31.4	132.4	3.3	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good			1	14
overcup oak	Quercus lyrata	NSL	Medium	12.2	132.2	6.7	Lg. dec.	Sm. dec.	Low	Common	Very Poor	Poor			0	15
American elm	Ulmus americana	WDH	Medium	33.9	130.6	2.6	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good			1	16
American hornbeam; muscle	Carpinus caroliniana	WSL	Low	23.6	129.0	3.8	Sm. inc.	Sm. inc.	Medium	Common	Good	Good			1	17
river birch	Betula nigra	NSL	Low	11	122.5	8.1	Sm. inc.	Sm. inc.	Medium	Common	Good	Good			1	18
mockernut hickory	Carya alba	WDL	Medium	35.5	114.8	2.4	Lg. inc.	Lg. inc.	High	Common	Very Good	Very Good			1	19
eastern redcedar	Juniperus virginiana	WDH	Medium	28	103.2	2.2	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good			1	20
eastern hophornbeam; ironw	Ostrya virginiana	WSL	Low	21.3	101.7	3.5	Sm. inc.	Sm. inc.	High	Common	Very Good	Very Good			1	21
cedar elm	Ulmus crassifolia	NDH	Medium	5.6	91.0	8.0	Sm. inc.	Sm. inc.	Low	Common	Fair	Fair	Infill +	Infill +	1	22
green ash	Fraxinus pennsylvanica	WSH	Low	18.2	82.9	3.0	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good			1	23
bald cypress	Taxodium distichum	NSH	Medium	6.4	68.1	8.5	Sm. dec.	Sm. dec.	Medium	Common	Poor	Poor			0	24
honeylocust	Gleditsia triacanthos	NSH	Low	9.3	54.7	2.7	Sm. dec.	Sm. dec.	High	Common	Fair	Fair			1	25
blackjack oak	Quercus marilandica	NSL	Medium	16.4	48.2	2.4	Lg. inc.	Lg. inc.	High	Rare	Good	Good			1	26
black hickory	Carya texana	NDL	High	14.3	47.0	2.7	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			1	27
black cherry	Prunus serotina	WDL	Medium	33.5	43.5	0.9	Lg. inc.	Lg. inc.	Low	Rare	Fair	Fair			1	28
white ash	Fraxinus americana	WDL	Medium	19.6	43.4	1.5	No change	No change	Low	Rare	Very Poor	Very Poor			0	29
sassafras	Sassafras albidum	WSL	Low	22.7	42.0	1.4	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			1	30
flowering dogwood	Cornus florida	WDL	Medium	25.6	40.1	1.1	Sm. inc.	Sm. inc.	Medium	Rare	Fair	Fair			1	31
common persimmon	Diospyros virginiana	NSL	Low	21.2	39.8	1.6	Sm. dec.	Sm. inc.	High	Rare	Poor	Good			1	32
water elm	Planera aquatica	NSL	Low	7.9	39.0	3.7	Sm. dec.	No change	Medium	Rare	Very Poor	Poor			1	33
bluejack oak	Quercus incana	NSL	Low	5.7	35.3	3.7	Sm. dec.	No change	Medium	Rare	Very Poor	Poor			1	34
American holly	Ilex opaca	NSL	Medium	16.1	29.8	1.4	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			1	35
cittamwood/gum bumelia	Sideroxylon lanuginosum ssp.	NSL	Low	4.5	23.9	4.8	Lg. inc.	Lg. inc.	High	Rare	Good	Good	Infill ++	Infill ++	1	36
florida maple	Acer barbatum	NSL	Low	6.9	21.2	1.7	Sm. dec.	Sm. dec.	High	Rare	Poor	Poor	Infill +		1	37
bitternut hickory	Carya cordiformis	WSL	Low	7.9	19.3	2.2	Sm. dec.	Sm. dec.	High	Rare	Poor	Poor			1	38
water hickory	Carya aquatica	NSL	Medium	3.6	16.7	1.2	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			2	39
pecan	Carya illinoinensis	NSH	Low	7.2	13.7	1.3	No change	No change	Low	Rare	Very Poor	Very Poor			0	40
sycamore	Platanus occidentalis	NSL	Low	1	13.4	14.0	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			2	41
red mulberry	Morus rubra	NSL	Low	9.9	13.3	0.8	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	42
Osage-orange	Maclura pomifera	NDH	Medium	2.9	13.0	4.5	Sm. dec.	No change	High	Rare	Poor	Fair		Infill +	2	43
boxelder	Acer negundo	WSH	Low	3.4	12.3	3.1	Sm. dec.	Sm. dec.	High	Rare	Poor	Poor			1	44
black oak	Quercus velutina	WDH	High	5.3	12.0	1.2	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	45
sweetbay	Magnolia virginiana	NSL	Medium	1.6	11.4	2.5	No change	No change	Medium	Rare	Poor	Poor	Infill +		2	46
slash pine	Pinus elliottii	NDH	High	2.4	8.7	2.9	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			2	47

Sep 2022

S32 E94

One x One Degree
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Common Name	Scientific Name	Range	MR	%Cell	FIAsum	FIAiv	ChngCl45	ChngCl85	Adap	Abund	Capabil45	Capabil85	SHIFT45	SHIFT85	SSO	N
American beech	Fagus grandifolia	WDH	High	1.3	7.0	2.1	Sm. inc.	Sm. inc.	Medium	Rare	Fair	Fair	Infill +		2	48
Shumard oak	Quercus shumardii	NSL	Low	3.8	6.1	1.6	Sm. dec.	Sm. dec.	High	Rare	Poor	Poor			0	49
nuttall oak	Quercus texana	NSH	Medium	1	4.5	4.6	Sm. dec.	Sm. dec.	High	Rare	Poor	Poor			0	50
swamp chestnut oak	Quercus michauxii	NSL	Low	3	4.3	1.0	No change	No change	Medium	Rare	Poor	Poor	Infill +		2	51
shagbark hickory	Carya ovata	WSL	Medium	1.6	4.2	0.7	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	52
eastern redbud	Cercis canadensis	NSL	Low	3.4	3.2	0.7	Sm. dec.	No change	Medium	Rare	Very Poor	Poor		Infill +	1	53
slippery elm	Ulmus rubra	WSL	Low	1.9	2.6	1.4	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	54
pignut hickory	Carya glabra	WDL	Medium	1.9	2.5	0.6	Lg. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	55
wild plum	Prunus americana	NSLX	FIA	1.8	2.3	1.2	Unknown	Unknown	Medium	Rare	FIA Only	FIA Only			0	56
hackberry	Celtis occidentalis	WDH	Medium	1	2.1	2.2	Sm. dec.	Sm. dec.	High	Rare	Poor	Poor			0	57
black walnut	Juglans nigra	WDH	Low	0.7	1.9	1.5	Very Lg. dec.	Very Lg. dec.	Medium	Rare	Lost	Lost			0	58
black locust	Robinia pseudoacacia	NDH	Low	1	1.8	1.9	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	59
waterlocust	Gleditsia aquatica	NSLX	FIA	1.9	1.8	0.9	Unknown	Unknown	Medium	Rare	FIA Only	FIA Only			0	60
swamp tupelo	Nyssa biflora	NDH	Medium	1	1.2	1.3	Lg. inc.	Lg. inc.	Low	Rare	Fair	Fair	Infill +	Infill +	2	61
live oak	Quercus virginiana	NDH	High	1	0.7	0.7	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			2	62
eastern cottonwood	Populus deltoides	NSH	Low	0.7	0.4	0.3	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	63
longleaf pine	Pinus palustris	NSH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	64
serviceberry	Amelanchier spp.	NSL	Low	0	0	0	Unknown	New Habitat	Medium	Absent	Unknown	New Habitat			3	65
shellbark hickory	Carya laciniosa	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	66
black ash	Fraxinus nigra	WSH	Medium	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat			3	67
silverbell	Halesia spp.	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	68
southern magnolia	Magnolia grandiflora	NSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Likely +	Likely +	3	69
sourwood	Oxydendrum arboreum	NDL	High	0	0	0	Unknown	Unknown	High	Absent	Unknown	Unknown			0	70
redbay	Persea borbonia	NSL	Low	0	0	0	Unknown	New Habitat	High	Absent	Unknown	New Habitat		Likely +	3	71
pin cherry	Prunus pensylvanica	NSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	72
scarlet oak	Quercus coccinea	WDL	Medium	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	73
turkey oak	Quercus laevis	NSH	Medium	0	0	0	Unknown	Unknown	High	Modeled	Unknown	Unknown			0	74
laurel oak	Quercus laurifolia	NDH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	75
chinkapin oak	Quercus muehlenbergii	NSL	Medium	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	76
chestnut oak	Quercus prinus	NDH	High	0	0	0	Unknown	Unknown	High	Absent	Unknown	Unknown			0	77
northern red oak	Quercus rubra	WDH	Medium	0	0	0	Unknown	Unknown	High	Absent	Unknown	Unknown			0	78
American basswood	Tilia americana	WSL	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Likely +	Likely +	3	79