

Current and Potential Future Habitat, Capability, and Migration

	sq. km	sq. mi	FIA Plots
Area of Region	13,988	5,401.0	497

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	Scenario	Scenario	Scenario	SHIFT	SHIFT				
				High	25	Increase	RCP45	RCP85	Very Good	11	15	Likely	1	1	
Ash	2			Medium	33	53	No Change	20	16	Good	16	16	Infill	17	19
Hickory	7			Low	39	12	Decrease	15	13	Fair	15	14	Migrate	7	10
Maple	4	Abundant	4	FIA	3		New	13	15	Poor	11	12			
Oak	15	Common	21				Unknown	14	12	Very Poor	11	8			
Pine	2	Rare	43							FIA Only	1	1			
Other	38	Absent	22							Unknown	11	9			
	68		90		92	90		92	92		76	75		25	30

Potential Changes in Climate Variables

Temperature (°F)

Scenario	2009	2039	2069	2099		
Annual	CCSM45	54.8	56.1	57.6	57.9	
Average	CCSM85	54.8	56.4	58.3	60.4	
	GFDL45	54.8	57.1	58.3	59.3	
	GFDL85	54.8	57.1	59.2	62.0	
	HAD45	54.8	56.7	59.0	59.9	
	HAD85	54.8	56.9	60.4	63.2	
Growing	CCSM45	66.1	67.4	68.7	69.1	
Season	CCSM85	66.1	67.8	69.6	72.3	
May—Sep	GFDL45	66.1	68.9	70.2	71.9	
	GFDL85	66.1	69.0	71.4	75.0	
	HAD45	66.1	68.4	70.7	71.4	
	HAD85	66.1	68.7	73.4	75.9	
Coldest	CCSM45	38.0	39.9	40.7	40.7	
Month	CCSM85	38.0	40.1	40.9	42.1	
Average	GFDL45	38.0	41.0	41.2	41.2	
	GFDL85	38.0	38.9	40.0	40.5	
	HAD45	38.0	38.8	40.2	40.6	
	HAD85	38.0	39.6	41.0	42.4	
Warmest	CCSM45	70.5	71.7	72.3	72.4	
Month	CCSM85	70.5	72.1	72.7	74.1	
Average	GFDL45	70.5	74.2	74.6	75.7	
	GFDL85	70.5	73.9	75.0	77.6	
	HAD45	70.5	73.4	74.6	74.8	
	HAD85	70.5	74.1	76.7	77.5	

Precipitation (in)

Scenario	2009	2039	2069	2099		
Annual	CCSM45	42.9	42.6	45.5	44.7	
Total	CCSM85	42.9	43.8	46.4	47.0	
	GFDL45	42.9	45.3	50.8	46.5	
	GFDL85	42.9	45.5	49.3	49.4	
	HAD45	42.9	42.4	45.2	47.3	
	HAD85	42.9	46.5	40.0	43.3	
Growing	CCSM45	16.5	16.5	16.0	16.3	
Season	CCSM85	16.5	16.1	15.2	16.0	
May—Sep	GFDL45	16.5	17.6	19.6	18.4	
	GFDL85	16.5	18.2	19.7	19.0	
	HAD45	16.5	15.7	16.0	15.6	
	HAD85	16.5	16.7	12.1	12.6	

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	82	3722.9	32.5	No change	No change	Medium	Abundant	Good	Good			1	1	
shortleaf pine	Pinus echinata	WDH	High	74.5	1480.6	14.2	No change	No change	Medium	Abundant	Good	Good			1	2	
sweetgum	Liquidambar styraciflua	WDH	High	87.6	1071.1	8.4	Sm. inc.	Sm. inc.	Medium	Abundant	Very Good	Very Good			1	3	
white oak	Quercus alba	WDH	Medium	83.1	950.7	8.2	Sm. dec.	Sm. dec.	High	Abundant	Good	Good			1	4	
post oak	Quercus stellata	WDH	High	71.1	447.2	4.6	Lg. inc.	Lg. inc.	High	Common	Very Good	Very Good			1	5	
winged elm	Ulmus alata	WDL	Medium	82	351.1	2.9	Sm. inc.	Sm. inc.	Medium	Common	Good	Good			1	6	
southern red oak	Quercus falcata	WDL	Medium	67.2	333.0	3.4	Lg. inc.	Lg. inc.	High	Common	Very Good	Very Good			1	7	
red maple	Acer rubrum	WDH	High	78.5	331.5	2.8	Sm. inc.	Sm. inc.	High	Common	Very Good	Very Good			1	8	
blackgum	Nyssa sylvatica	WDL	Medium	82.2	283.6	2.4	Sm. inc.	Sm. inc.	High	Common	Very Good	Very Good			1	9	
mockernut hickory	Carya alba	WDL	Medium	68.9	270.5	3.0	Sm. inc.	Sm. inc.	High	Common	Very Good	Very Good			1	10	
black hickory	Carya texana	NDL	High	61.9	266.8	3.3	No change	Sm. inc.	Medium	Common	Fair	Good			1	11	
water oak	Quercus nigra	WDH	High	51	256.5	3.3	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good			1	12	
northern red oak	Quercus rubra	WDH	Medium	37	234.2	4.1	Sm. dec.	Sm. dec.	High	Common	Fair	Fair			1	13	
black oak	Quercus velutina	WDH	High	45.6	163.8	2.6	No change	No change	Medium	Common	Fair	Fair			1	14	
cherrybark oak; swamp red o.	Quercus pagoda	NSL	Medium	36.1	138.0	2.5	Sm. inc.	Sm. inc.	Medium	Common	Good	Good			1	15	
green ash	Fraxinus pennsylvanica	WSH	Low	45.2	137.3	1.8	Sm. inc.	Lg. inc.	Medium	Common	Good	Very Good			1	16	
eastern hophornbeam; ironw	Ostrya virginiana	WSL	Low	54	135.5	1.9	Sm. inc.	Sm. inc.	High	Common	Very Good	Very Good			1	17	
willow oak	Quercus phellos	NSL	Low	33.2	124.8	2.7	Sm. inc.	Lg. inc.	Medium	Common	Good	Very Good			1	18	
American hornbeam; musclev	Carpinus caroliniana	WSL	Low	43.3	123.6	1.9	Sm. inc.	Lg. inc.	Medium	Common	Good	Very Good			1	19	
black cherry	Prunus serotina	WDL	Medium	52.9	107.2	1.3	Lg. inc.	Lg. inc.	Low	Common	Good	Good			1	20	
American holly	Ilex opaca	NSL	Medium	35.4	88.3	1.9	No change	No change	Medium	Common	Fair	Fair			1	21	
eastern redcedar	Juniperus virginiana	WDH	Medium	23.8	71.9	2.4	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good			1	22	
sugarberry	Celtis laevigata	NDH	Medium	20.5	71.4	3.1	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good			1	23	
flowering dogwood	Cornus florida	WDL	Medium	57.9	69.6	0.9	Sm. inc.	Lg. inc.	Medium	Common	Good	Very Good			1	24	
American elm	Ulmus americana	WDH	Medium	15	62.8	3.5	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good			1	25	
blackjack oak	Quercus marilandica	NSL	Medium	19.5	47.3	1.8	Lg. inc.	Lg. inc.	High	Rare	Good	Good			1	26	
bald cypress	Taxodium distichum	NSH	Medium	2.9	42.8	10.6	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	2	27	
American beech	Fagus grandifolia	WDH	High	9.7	34.7	2.3	Sm. inc.	Sm. inc.	Medium	Rare	Fair	Fair	Infill +	Infill +	2	28	
slippery elm	Ulmus rubra	WSL	Low	18.5	29.1	1.4	No change	Sm. inc.	Medium	Rare	Poor	Fair			1	29	
silver maple	Acer saccharinum	NSH	Low	2.9	28.3	9.9	Sm. dec.	Sm. dec.	High	Rare	Poor	Poor			0	30	
hackberry	Celtis occidentalis	WDH	Medium	4.7	27.8	2.7	No change	No change	High	Rare	Fair	Fair	Infill +	Infill +	1	31	
swamp chestnut oak	Quercus michauxii	NSL	Low	9	23.9	1.5	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	1	32	
shagbark hickory	Carya ovata	WSL	Medium	8.1	22.7	2.6	Lg. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	33	
pignut hickory	Carya glabra	WDL	Medium	9.9	21.2	1.7	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	1	34	
honeylocust	Gleditsia triacanthos	NSH	Low	6.8	21.0	1.7	No change	Sm. inc.	High	Rare	Fair	Good	Infill +	Infill ++	1	35	
Osage-orange	Maclura pomifera	NDH	Medium	2.9	19.8	5.0	No change	No change	High	Rare	Fair	Fair	Infill +	Infill +	2	36	
white ash	Fraxinus americana	WDL	Medium	8.6	19.6	1.7	No change	Sm. inc.	Low	Rare	Very Poor	Poor			Infill +	1	37
boxelder	Acer negundo	WSH	Low	5.7	17.8	1.4	No change	No change	High	Rare	Fair	Fair	Infill +	Infill +	1	38	
overcup oak	Quercus lyrata	NSL	Medium	7.7	16.6	2.1	No change	Sm. inc.	Low	Rare	Very Poor	Poor			Infill +	1	39
common persimmon	Diospyros virginiana	NSL	Low	12.8	15.3	0.9	Lg. inc.	Lg. inc.	High	Rare	Good	Good			1	40	
eastern cottonwood	Populus deltoides	NSH	Low	0.3	14.3	8.6	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	41	
Shumard oak	Quercus shumardii	NSL	Low	4.5	13.8	1.8	No change	No change	High	Rare	Fair	Fair	Infill +	Infill +	1	42	
sassafras	Sassafras albidum	WSL	Low	10.5	13.7	0.6	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			1	43	
eastern redbud	Cercis canadensis	NSL	Low	2.9	13.0	2.7	Sm. dec.	No change	Medium	Rare	Very Poor	Poor			1	44	
sycamore	Platanus occidentalis	NSL	Low	6.3	12.8	1.3	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	1	45	
sweetbay	Magnolia virginiana	NSL	Medium	7.5	11.8	1.0	Sm. inc.	Sm. inc.	Medium	Rare	Fair	Fair	Infill +	Infill +	1	46	
red mulberry	Morus rubra	NSL	Low	9.3	10.5	0.8	No change	No change	Medium	Rare	Poor	Poor			1	47	

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river birch	Betula nigra	NSL	Low	2.8	9.3	3.2	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good	Infill ++	Infill ++	1	48
chinkapin oak	Quercus muehlenbergii	NSL	Medium	3.8	8.3	1.4	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	49
black willow	Salix nigra	NSH	Low	4.9	7.9	1.6	Lg. inc.	Lg. inc.	Low	Rare	Fair	Fair	Infill +	Infill +	1	50
bitternut hickory	Carya cordiformis	WSL	Low	8.1	7.6	0.8	Lg. dec.	Lg. dec.	High	Rare	Poor	Poor			1	51
Nuttall oak	Quercus texana	NSH	Medium	2.1	4.7	2.2	Sm. dec.	Sm. dec.	High	Rare	Poor	Poor			0	52
water hickory	Carya aquatica	NSL	Medium	2.1	4.6	2.0	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	2	53
black walnut	Juglans nigra	WDH	Low	0.6	4.3	5.0	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	54
florida maple	Acer barbatum	NSL	Low	2.6	4.3	0.7	No change	Sm. inc.	High	Rare	Fair	Good	Infill +	Infill ++	2	55
black locust	Robinia pseudoacacia	NDH	Low	2.8	4.2	0.9	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	56
pecan	Carya illinoensis	NSH	Low	1.4	3.9	2.7	Sm. inc.	Lg. inc.	Low	Rare	Poor	Fair		Infill +	2	57
serviceberry	Amelanchier spp.	NSL	Low	5	2.4	0.3	Sm. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	58
wild plum	Prunus americana	NSLX	FIA	4.1	2.4	0.5	Unknown	Unknown	Medium	Rare	FIA Only	FIA Only			0	59
American basswood	Tilia americana	WSL	Medium	2	2.2	0.9	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	60
cedar elm	Ulmus crassifolia	NDH	Medium	2.1	1.8	0.9	Lg. inc.	Lg. inc.	Low	Rare	Fair	Fair	Infill +	Infill +	2	61
water elm	Planera aquatica	NSL	Low	1.4	1.2	0.8	Sm. inc.	Lg. inc.	Medium	Rare	Fair	Good	Infill +		2	62
Ohio buckeye	Aesculus glabra	NSL	Low	0.7	0.9	1.3	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	63
laurel oak	Quercus laurifolia	NDH	Medium	0.7	0.9	1.2	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			2	64
paulownia	Paulownia tomentosa	NSL	FIA	0.7	0.6	0.9	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	65
redbay	Persea borbonia	NSL	Low	0.7	0.5	0.7	Very Lg. dec.	No change	High	Rare	Lost	Fair			0	66
cittamwood/gum bumelia	Sideroxylon lanuginosum ssp.	NSL	Low	0.7	0.3	0.4	Lg. inc.	Lg. inc.	High	Rare	Good	Good			2	67
ailanthus	Ailanthus altissima	NSL	FIA	0.7	0.3	0.4	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	68
ashe juniper	Juniperus ashei	NDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			0	69
slash pine	Pinus elliotii	NDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate ++	Migrate ++	3	70
longleaf pine	Pinus palustris	NSH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +	Migrate ++	3	71
Virginia pine	Pinus virginiana	NDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	72
striped maple	Acer pensylvanicum	NSL	Medium	0	0	0	Unknown	New Habitat	Medium	Absent	Unknown	New Habitat			3	73
mountain maple	Acer spicatum	NSL	Low	0	0	0	Unknown	Unknown	High	Absent	Unknown	Unknown			0	74
pawpaw	Asimina triloba	NSL	Low	0	0	0	Unknown	Unknown	Medium	Modeled	Unknown	Unknown			0	75
sweet birch	Betula lenta	NDH	High	0	0	0	Unknown	Unknown	Low	Absent	Unknown	Unknown			0	76
shellbark hickory	Carya laciniosa	NSL	Low	0	0	0	Unknown	Unknown	Medium	Modeled	Unknown	Unknown			0	77
black ash	Fraxinus nigra	WSH	Medium	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat			3	78
silverbell	Halesia spp.	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	79
yellow-poplar	Liriodendron tulipifera	WDH	High	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	80
cucumbertree	Magnolia acuminata	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	81
southern magnolia	Magnolia grandiflora	NSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate +	3	82
bigleaf magnolia	Magnolia macrophylla	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	83
mountain or Fraser magnolia	Magnolia fraseri	NSL	Low	0	0	0	Unknown	Unknown	Low	Absent	Unknown	Unknown			0	84
water tupelo	Nyssa aquatica	NSH	Medium	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat	Likely +	Likely +	3	85
swamp tupelo	Nyssa biflora	NDH	Medium	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat		Migrate +	3	86
sourwood	Oxydendrum arboreum	NDL	High	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	87
pin cherry	Prunus pensylvanica	NSL	Low	0	0	0	Unknown	New Habitat	Medium	Absent	Unknown	New Habitat			3	88
pin oak	Quercus palustris	NSH	Low	0	0	0	Unknown	Unknown	Low	Absent	Unknown	Unknown			0	89
chestnut oak	Quercus prinus	NDH	High	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	90
live oak	Quercus virginiana	NDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate ++	Migrate ++	3	91
bluejack oak	Quercus incana	NSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate +	3	92