

Current and Potential Future Habitat, Capability, and Migration

	sq. km	sq. mi	FIA Plots
Area of Region	8,600.0	3,320.5	253

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	2			High	24	26	Increase	24	33	Very Good	12	13	Likely	2	2
Hickory	4			Medium	32	55	No Change	30	22	Good	16	19	Infill	8	10
Maple	7	Abundant	5	Low	39	17	Decrease	14	13	Fair	17	18	Migrate	4	15
Oak	10	Common	32	FIA	6		New	19	24	Poor	15	12			
Pine	6	Rare	37				Unknown	14	9	Very Poor	8	5			
Other	45	Absent	27							FIA Only	3	3			
	74		101		101	98		101	101	Unknown	8	3			
											79	73			

Potential Changes in Climate Variables

Temperature (°F)

	Scenario	2009	2039	2069	2099
Annual Average	CCSM45	54.4	56.3	58.5	58.6
	CCSM85	54.4	56.7	59.1	62.0
	GFDL45	54.4	57.1	59.6	60.3
	GFDL85	54.4	57.3	60.7	64.3
	HAD45	54.4	56.7	59.7	61.0
	HAD85	54.4	57.0	61.3	65.2
Growing Season May—Sep	CCSM45	67.9	69.7	71.7	72.2
	CCSM85	67.9	69.9	72.6	76.3
	GFDL45	67.9	71.0	73.8	75.1
	GFDL85	67.9	71.4	75.4	79.4
	HAD45	67.9	71.0	73.7	75.3
	HAD85	67.9	71.0	76.9	80.8
Coldest Month Average	CCSM45	34.3	36.5	37.5	37.5
	CCSM85	34.3	37.0	37.8	39.1
	GFDL45	34.3	37.4	37.5	37.9
	GFDL85	34.3	36.1	37.2	37.7
	HAD45	34.3	34.1	36.1	36.5
	HAD85	34.3	35.2	36.7	38.2
Warmest Month Average	CCSM45	72.3	74.4	75.5	75.6
	CCSM85	72.3	74.6	76.2	77.9
	GFDL45	72.3	75.7	77.1	77.9
	GFDL85	72.3	76.2	78.5	80.6
	HAD45	72.3	76.2	78.2	78.9
	HAD85	72.3	77.0	81.0	82.9

Precipitation (in)

	Scenario	2009	2039	2069	2099
Annual Total	CCSM45	56.2	59.1	63.0	62.1
	CCSM85	56.2	60.6	62.6	67.6
	GFDL45	56.2	62.5	63.9	68.2
	GFDL85	56.2	61.7	65.6	66.8
	HAD45	56.2	55.6	59.6	60.9
	HAD85	56.2	60.3	55.2	58.5
Growing Season May—Sep	CCSM45	24.0	25.6	27.3	27.1
	CCSM85	24.0	26.1	25.7	28.1
	GFDL45	24.0	27.9	28.3	29.8
	GFDL85	24.0	26.7	29.2	29.8
	HAD45	24.0	23.8	23.8	24.6
	HAD85	24.0	26.1	21.4	22.9

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
chestnut oak	Quercus prinus	NDH	High	70.9	859.5	12.1	No change	No change	High	Abundant	Very Good	Very Good			1	1
yellow-poplar	Liriodendron tulipifera	WDH	High	80.2	857.1	10.7	No change	Sm. dec.	High	Abundant	Very Good	Good			1	2
red maple	Acer rubrum	WDH	High	81.4	818.9	10.1	No change	No change	High	Abundant	Very Good	Very Good			1	3
Virginia pine	Pinus virginiana	NDH	High	50	537.4	10.8	Sm. inc.	Sm. inc.	Medium	Abundant	Very Good	Very Good			1	4
eastern hemlock	Tsuga canadensis	NSH	High	66.3	503.1	7.6	No change	No change	Low	Abundant	Fair	Fair			0	5
northern red oak	Quercus rubra	WDH	Medium	68.6	406.5	5.9	Sm. inc.	Sm. inc.	High	Common	Very Good	Very Good			1	6
scarlet oak	Quercus coccinea	WDL	Medium	62.8	402.1	6.4	No change	No change	Medium	Common	Fair	Fair			1	7
sweet birch	Betula lenta	NDH	High	58.1	376.3	6.5	Sm. dec.	Sm. dec.	Low	Common	Poor	Poor			0	8
sourwood	Oxydendrum arboreum	NDL	High	80.2	325.6	4.1	No change	No change	High	Common	Good	Good			1	9
pignut hickory	Carya glabra	WDL	Medium	65.1	274.8	4.2	No change	No change	Medium	Common	Fair	Fair			1	10
eastern white pine	Pinus strobus	WDH	High	39.5	270.7	6.9	Sm. inc.	Sm. inc.	Low	Common	Fair	Fair			1	11
white oak	Quercus alba	WDH	Medium	65.1	263.0	4.0	Lg. inc.	Lg. inc.	High	Common	Very Good	Very Good			1	12
black locust	Robinia pseudoacacia	NDH	Low	64	260.7	4.1	No change	No change	Medium	Common	Fair	Fair			1	13
red spruce	Picea rubens	NDH	High	9.3	211.5	22.7	Sm. dec.	Sm. dec.	Low	Common	Poor	Poor			0	14
eastern redcedar	Juniperus virginiana	WDH	Medium	19.8	199.5	10.1	Sm. inc.	Lg. inc.	Medium	Common	Good	Very Good			1	15
mockernut hickory	Carya alba	WDL	Medium	45.3	186.7	4.1	Sm. inc.	Lg. inc.	High	Common	Very Good	Very Good			1	16
blackgum	Nyssa sylvatica	WDL	Medium	69.8	167.2	2.4	Sm. inc.	Lg. inc.	High	Common	Very Good	Very Good			1	17
white ash	Fraxinus americana	WDL	Medium	36	155.6	4.3	No change	Sm. inc.	Low	Common	Poor	Fair			1	18
shortleaf pine	Pinus echinata	WDH	High	39.5	155.3	3.9	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good			1	19
pitch pine	Pinus rigida	NSH	High	39.5	152.2	3.9	Sm. inc.	Sm. inc.	Medium	Common	Good	Good			1	20
yellow birch	Betula alleghaniensis	NDL	High	25.6	151.6	5.9	No change	No change	Medium	Common	Fair	Fair			1	21
American beech	Fagus grandifolia	WDH	High	38.4	147.3	3.8	No change	Sm. inc.	Medium	Common	Fair	Good			1	22
sugar maple	Acer saccharum	WDH	High	43	144.2	3.4	No change	Sm. dec.	High	Common	Good	Fair			1	23
flowering dogwood	Cornus florida	WDL	Medium	55.8	143.0	2.6	No change	No change	Medium	Common	Fair	Fair			1	24
black oak	Quercus velutina	WDH	High	50	139.4	2.8	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good			1	25
southern red oak	Quercus falcata	WDL	Medium	20.9	121.0	5.8	Sm. inc.	Lg. inc.	High	Common	Very Good	Very Good			1	26
black cherry	Prunus serotina	WDL	Medium	29.1	90.1	3.1	Lg. inc.	Lg. inc.	Low	Common	Good	Good			1	27
shagbark hickory	Carya ovata	WSL	Medium	22.1	77.7	3.5	Sm. dec.	No change	Medium	Common	Poor	Fair			1	28
yellow buckeye	Aesculus flava	NSL	Low	19.8	77.6	3.9	No change	No change	Low	Common	Poor	Poor			0	29
American basswood	Tilia americana	WSL	Medium	20.9	75.6	3.6	Sm. inc.	Sm. inc.	Medium	Common	Good	Good			1	30
post oak	Quercus stellata	WDH	High	11.6	74.3	6.4	Lg. inc.	Lg. inc.	High	Common	Very Good	Very Good	Infill ++	Infill ++	1	31
silverbell	Halesia spp.	NSL	Low	25.6	70.4	2.8	No change	No change	Medium	Common	Fair	Fair			1	32
black walnut	Juglans nigra	WDH	Low	19.8	64.0	3.2	No change	Sm. inc.	Medium	Common	Fair	Good			1	33
sassafras	Sassafras albidum	WSL	Low	37.2	61.8	1.7	Sm. inc.	Sm. inc.	Medium	Common	Good	Good			1	34
mountain or Fraser magnolia	Magnolia fraseri	NSL	Low	23.3	61.2	2.6	No change	Sm. inc.	Low	Common	Poor	Fair			0	35
hackberry	Celtis occidentalis	WDH	Medium	9.3	59.8	6.4	No change	No change	High	Common	Good	Good	Infill ++	Infill ++	1	36
American elm	Ulmus americana	WDH	Medium	10.5	59.0	5.6	No change	Lg. inc.	Medium	Common	Fair	Very Good	Infill +	Infill ++	1	37
winged elm	Ulmus alata	WDL	Medium	11.6	49.2	4.2	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			1	38
serviceberry	Amelanchier spp.	NSL	Low	29.1	44.8	1.5	No change	No change	Medium	Rare	Poor	Poor			1	39
loblolly pine	Pinus taeda	WDH	High	7	42.2	6.1	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good	Infill ++	Infill ++	1	40
American holly	Ilex opaca	NSL	Medium	7	37.5	5.4	Sm. dec.	No change	Medium	Rare	Very Poor	Poor			1	41
green ash	Fraxinus pennsylvanica	WSH	Low	12.8	35.4	2.8	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			1	42
striped maple	Acer pensylvanicum	NSL	Medium	26.7	35.1	1.3	No change	No change	Medium	Rare	Poor	Poor			1	43
Table Mountain pine	Pinus pungens	NSL	Low	10.5	35.0	3.3	Sm. dec.	Sm. dec.	High	Rare	Poor	Poor			1	44
eastern hophornbeam; ironw	Ostrya virginiana	WSL	Low	10.5	33.5	3.2	Sm. inc.	Lg. inc.	High	Rare	Good	Good			1	45
bitternut hickory	Carya cordiformis	WSL	Low	10.5	29.7	2.8	No change	Sm. inc.	High	Rare	Fair	Good			1	46
sweetgum	Liquidambar styraciflua	WDH	High	15.1	26.6	1.8	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good	Infill ++	Infill ++	1	47



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eastern redbud	<i>Cercis canadensis</i>	NSL	Low	18.6	25.8	1.4	No change	Sm. inc.	Medium	Rare	Poor	Fair			1	48
cucumber tree	<i>Magnolia acuminata</i>	NSL	Low	14	24.1	1.7	Sm. inc.	Sm. inc.	Medium	Rare	Fair	Fair			1	49
pin cherry	<i>Prunus pensylvanica</i>	NSL	Low	7	21.7	3.1	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	50
boxelder	<i>Acer negundo</i>	WSH	Low	5.8	19.8	3.4	No change	No change	High	Rare	Fair	Fair	Infill +	Infill +	1	51
chinkapin oak	<i>Quercus muehlenbergii</i>	NSL	Medium	3.5	15.2	4.3	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	2	52
American hornbeam; muscley	<i>Carpinus caroliniana</i>	WSL	Low	10.5	14.4	1.4	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			1	53
American chestnut	<i>Castanea dentata</i>	NSLX	FIA	14	9.1	0.7	Unknown	Unknown	Medium	Rare	FIA Only	FIA Only			0	54
common persimmon	<i>Diospyros virginiana</i>	NSL	Low	8.1	8.8	1.1	No change	No change	High	Rare	Fair	Fair			1	55
slippery elm	<i>Ulmus rubra</i>	WSL	Low	3.5	6.9	2.0	No change	Sm. inc.	Medium	Rare	Poor	Fair	Infill +	Infill +	1	56
white mulberry	<i>Morus alba</i>	NSL	FIA	3.5	5.7	1.6	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	57
river birch	<i>Betula nigra</i>	NSL	Low	1.2	5.2	4.4	Sm. dec.	No change	Medium	Rare	Very Poor	Poor		Infill +	2	58
chokecherry	<i>Prunus virginiana</i>	NSLX	FIA	1.2	3.7	3.2	Unknown	Unknown	Medium	Rare	FIA Only	FIA Only			0	59
red mulberry	<i>Morus rubra</i>	NSL	Low	5.8	3.6	0.6	No change	No change	Medium	Rare	Poor	Poor		Infill +	1	60
shingle oak	<i>Quercus imbricaria</i>	NDH	Medium	1.2	3.5	3.0	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	61
ailanthus	<i>Ailanthus altissima</i>	NSL	FIA	3.5	3.2	0.9	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	62
bigleaf magnolia	<i>Magnolia macrophylla</i>	NSL	Low	1.2	2.7	2.3	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	63
bigtooth aspen	<i>Populus grandidentata</i>	NSL	Medium	1.2	2.2	1.9	Lg. dec.	Very Lg. dec.	Medium	Rare	Very Poor	Lost			0	64
mountain maple	<i>Acer spicatum</i>	NSL	Low	1.2	1.4	1.2	No change	No change	High	Rare	Fair	Fair			1	65
sugarberry	<i>Celtis laevigata</i>	NDH	Medium	1.2	1.1	1.0	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			2	66
honeylocust	<i>Gleditsia triacanthos</i>	NSH	Low	1.2	0.9	0.8	Sm. inc.	Lg. inc.	High	Rare	Good	Good			2	67
silver maple	<i>Acer saccharinum</i>	NSH	Low	1.2	0.6	0.5	Lg. dec.	Lg. dec.	High	Rare	Poor	Poor			0	68
Shumard oak	<i>Quercus shumardii</i>	NSL	Low	1.2	0.6	0.5	No change	Lg. inc.	High	Rare	Fair	Good			2	69
butternut	<i>Juglans cinerea</i>	NSLX	FIA	1.2	0.6	0.5	Unknown	Unknown	Low	Rare	FIA Only	FIA Only			0	70
black maple	<i>Acer nigrum</i>	NSH	Low	1.2	0.4	0.4	Lg. dec.	Lg. dec.	High	Rare	Poor	Poor			0	71
pawpaw	<i>Asimina triloba</i>	NSL	Low	1.2	0.4	0.4	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	72
paulownia	<i>Paulownia tomentosa</i>	NSL	FIA	1.2	0.3	0.3	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	73
American mountain-ash	<i>Sorbus americana</i>	NSL	Low	1.2	0.3	0.3	Lg. dec.	Lg. dec.	Low	Rare	Very Poor	Very Poor			0	74
ashe juniper	<i>Juniperus ashei</i>	NDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			0	75
slash pine	<i>Pinus elliottii</i>	NDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate +	3	76
longleaf pine	<i>Pinus palustris</i>	NSH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	77
pond cypress	<i>Taxodium ascendens</i>	NSH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	78
northern white-cedar	<i>Thuja occidentalis</i>	WSH	High	0	0	0	Unknown	New Habitat	Medium	Absent	Unknown	New Habitat			3	79
florida maple	<i>Acer barbatum</i>	NSL	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	80
Ohio buckeye	<i>Aesculus glabra</i>	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	81
cittamwood/gum bumelia	<i>Sideroxylon lanuginosum ssp.</i>	NSL	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat			3	82
pecan	<i>Carya illinoensis</i>	NSH	Low	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat		Migrate +	3	83
black hickory	<i>Carya texana</i>	NDL	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	84
black ash	<i>Fraxinus nigra</i>	WSH	Medium	0	0	0	Unknown	New Habitat	Low	Absent	Unknown	New Habitat			3	85
blue ash	<i>Fraxinus quadrangulata</i>	NSL	Low	0	0	0	Unknown	Unknown	Low	Absent	Unknown	Unknown			0	86
Osage-orange	<i>Maclura pomifera</i>	NDH	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Likely +	Likely +	3	87
southern magnolia	<i>Magnolia grandiflora</i>	NSL	Low	0	0	0	Unknown	New Habitat	Medium	Absent	Unknown	New Habitat		Migrate +	3	88
swamp tupelo	<i>Nyssa biflora</i>	NSH	Medium	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat		Migrate +	3	89
sycamore	<i>Platanus occidentalis</i>	NSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Likely +	Likely +	3	90
swamp white oak	<i>Quercus bicolor</i>	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	91
cherrybark oak; swamp red o.	<i>Quercus pagoda</i>	NSL	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate +	3	92
laurel oak	<i>Quercus laurifolia</i>	NDH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate +	3	93
overcup oak	<i>Quercus lyrata</i>	NSL	Medium	0	0	0	Unknown	New Habitat	Low	Absent	Unknown	New Habitat		Migrate +	3	94



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blackjack oak	Quercus marilandica	NSL	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Migrate +	Migrate ++	3	95
water oak	Quercus nigra	WDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +	Migrate ++	3	96
willow oak	Quercus phellos	NSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate +	3	97
live oak	Quercus virginiana	NDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate ++	3	98
bluejack oak	Quercus incana	NSL	Low	0	0	0	Unknown	New Habitat	Medium	Absent	Unknown	New Habitat		Migrate +	3	99
black willow	Salix nigra	NSH	Low	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat		Migrate +	3	100
cedar elm	Ulmus crassifolia	NDH	Medium	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat			0	101