

Current and Potential Future Habitat, Capability, and Migration

	sq. km	sq. mi	FIA Plots
Area of Region	9,305.0	3,592.7	45

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	1			High	21	20	Increase	16	11	Very Good	2	0	Likely	7	5
Hickory	3			Medium	31	46	No Change	9	12	Good	7	10	Infill	22	21
Maple	3	Abundant	0	Low	27	14	Decrease	8	10	Fair	9	5	Migrate	12	14
Oak	10	Common	6	FIA	5		New	37	36	Poor	8	10		41	40
Pine	3	Rare	32				Unknown	14	15	Very Poor	6	8			
Other	18	Absent	42							FIA Only	1	1			
	38		80		84	80		84	84	Unknown	9	10			
											42	44			

Potential Changes in Climate Variables

Temperature (°F)

	Scenario	2009	2039	2069	2099	
Annual Average	CCSM45	39.0	39.5	40.2	40.3	
	CCSM85	39.0	39.7	40.4	41.4	
	GFDL45	39.0	40.4	40.7	41.1	
	GFDL85	39.0	40.0	41.1	42.5	
	HAD45	39.0	39.7	40.8	41.3	
	HAD85	39.0	39.6	41.0	42.5	
Growing Season (May—Sep)	CCSM45	44.2	44.7	45.3	45.4	
	CCSM85	44.2	44.8	45.6	46.6	
	GFDL45	44.2	45.7	46.1	46.5	
	GFDL85	44.2	45.3	46.6	47.9	
	HAD45	44.2	44.9	45.9	46.5	
	HAD85	44.2	44.6	46.1	47.6	
Coldest Month (Average)	CCSM45	31.3	31.9	32.4	32.6	
	CCSM85	31.3	32.1	32.5	33.1	
	GFDL45	31.3	32.4	32.8	33.1	
	GFDL85	31.3	32.3	32.9	33.5	
	HAD45	31.3	31.6	32.4	32.5	
	HAD85	31.3	31.9	32.6	33.5	
Warmest Month (Average)	CCSM45	46.3	46.9	47.2	47.2	
	CCSM85	46.3	46.9	47.4	47.9	
	GFDL45	46.3	47.2	47.8	48.1	
	GFDL85	46.3	47.5	48.2	49.1	
	HAD45	46.3	47.1	47.6	47.9	
	HAD85	46.3	46.9	47.5	48.4	

Precipitation (in)

	Scenario	2009	2039	2069	2099	
Annual Total	CCSM45	16.2	16.5	16.7	18.2	
	CCSM85	16.2	17.0	17.7	18.6	
	GFDL45	16.2	17.8	19.0	18.4	
	GFDL85	16.2	17.5	18.6	19.5	
	HAD45	16.2	16.7	17.8	17.7	
	HAD85	16.2	18.3	17.7	18.6	
Growing Season (May—Sep)	CCSM45	6.6	7.6	7.3	7.9	
	CCSM85	6.6	7.3	7.6	7.4	
	GFDL45	6.6	6.8	6.9	7.3	
	GFDL85	6.6	6.9	7.0	7.4	
	HAD45	6.6	6.9	6.7	6.4	
	HAD85	6.6	7.2	6.5	6.7	

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
pitch pine	Pinus rigida	NSH	High	51.9	428.2	35.5	Sm. dec.	Lg. dec.	Medium	Common	Poor	Poor	Infill +	Infill +	0	1
scarlet oak	Quercus coccinea	WDL	Medium	63	216.9	15.1	No change	Sm. dec.	Medium	Common	Fair	Poor	Infill +	Infill +	1	2
white oak	Quercus alba	WDH	Medium	63.1	107.8	5.5	Sm. inc.	No change	High	Common	Very Good	Good	Infill ++	Infill ++	1	3
black cherry	Prunus serotina	WDL	Medium	54.7	89.7	7.2	No change	No change	Low	Common	Poor	Poor	Infill +	Infill +	0	4
eastern redcedar	Juniperus virginiana	WDH	Medium	12.1	70.9	9.1	Sm. inc.	Sm. inc.	Medium	Common	Good	Good	Infill ++	Infill ++	1	5
black oak	Quercus velutina	WDH	High	39.1	53.6	2.8	Lg. inc.	Sm. inc.	Medium	Common	Very Good	Good	Infill ++	Infill ++	1	6
red maple	Acer rubrum	WDH	High	54.7	47.1	3.1	Lg. inc.	Lg. inc.	High	Rare	Good	Good	Infill ++	Infill ++	1	7
black locust	Robinia pseudoacacia	NDH	Low	20.1	31.8	8.7	Sm. inc.	Sm. inc.	Medium	Rare	Fair	Fair	Infill +	Infill +	1	8
chestnut oak	Quercus prinus	NDH	High	8.8	29.7	7.1	No change	No change	High	Rare	Fair	Fair	Infill +	Infill +	2	9
sweet birch	Betula lenta	NDH	High	8.3	25.0	3.5	No change	Sm. dec.	Low	Rare	Very Poor	Very Poor			2	10
sassafras	Sassafras albidum	WSL	Low	36.6	20.4	2.3	Sm. inc.	No change	Medium	Rare	Fair	Poor	Infill +	Infill +	1	11
northern red oak	Quercus rubra	WDH	Medium	40	20.0	1.5	Lg. inc.	Lg. inc.	High	Rare	Good	Good	Infill ++	Infill ++	1	12
American beech	Fagus grandifolia	WDH	High	6.5	18.0	3.0	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	2	13
black walnut	Juglans nigra	WDH	Low	10.4	17.1	11.5	Sm. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			2	14
gray birch	Betula populifolia	NSL	Low	12.9	15.2	3.4	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	15
eastern white pine	Pinus strobus	WDH	High	29	14.6	8.6	Sm. inc.	Lg. dec.	Low	Rare	Poor	Very Poor	Infill +		1	16
pignut hickory	Carya glabra	WDL	Medium	27.2	11.6	2.0	Sm. inc.	Lg. inc.	Medium	Rare	Fair	Good	Infill +	Infill ++	1	17
bear oak; scrub oak	Quercus ilicifolia	NSLX	FIA	25.6	7.7	1.7	Unknown	Unknown	Medium	Rare	FIA Only	FIA Only			0	18
ailanthus	Ailanthus altissima	NSL	FIA	18.7	6.4	7.2	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	19
sugar maple	Acer saccharum	WDH	High	0.2	6.0	0.3	No change	No change	High	Rare	Fair	Fair	Infill +	Infill +	2	20
blackgum	Nyssa sylvatica	WDL	Medium	15.4	6.0	5.2	Lg. inc.	Lg. inc.	High	Rare	Good	Good	Infill ++	Infill ++	2	21
yellow-poplar	Liriodendron tulipifera	WDH	High	0.6	5.7	1.1	Lg. inc.	Lg. inc.	High	Rare	Good	Good			2	22
bigtooth aspen	Populus grandidentata	NSL	Medium	16.4	4.9	5.7	Sm. inc.	No change	Medium	Rare	Fair	Poor	Infill +	Infill +	2	23
mockernut hickory	Carya alba	WDL	Medium	6.2	4.8	2.8	No change	No change	High	Rare	Fair	Fair	Infill +	Infill +	2	24
white ash	Fraxinus americana	WDL	Medium	9.5	4.2	0.5	Sm. inc.	Sm. inc.	Low	Rare	Poor	Poor	Infill +	Infill +	2	25
serviceberry	Amelanchier spp.	NSL	Low	2.8	2.8	2.6	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	26
white mulberry	Morus alba	NSL	FIA	11.5	2.0	7.3	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	27
sweetgum	Liquidambar styraciflua	WDH	High	0.6	1.8	0.3	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			2	28
flowering dogwood	Cornus florida	WDL	Medium	23.5	1.5	0.6	Very Lg. dec.	No change	Medium	Rare	Lost	Poor		Infill +	1	29
American elm	Ulmus americana	WDH	Medium	0.2	1.4	0.1	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	2	30
post oak	Quercus stellata	WDH	High	22.7	1.1	0.9	Lg. inc.	Lg. inc.	High	Rare	Good	Good			2	31
Norway maple	Acer platanoides	NSL	FIA	11.7	1.1	1.4	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	32
northern pin oak	Quercus ellipsoidalis	NSH	Medium	0.2	1.0	0.1	Sm. dec.	Sm. dec.	High	Rare	Poor	Poor			0	33
bitternut hickory	Carya cordiformis	WSL	Low	7.6	0.9	0.4	No change	No change	High	Rare	Fair	Fair	Infill +	Infill +	2	34
swamp white oak	Quercus bicolor	NSL	Low	0.2	0.5	0.0	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	35
red pine	Pinus resinosa	NSH	Medium	9.3	0.4	1.2	Sm. dec.	Sm. dec.	Low	Rare	Very Poor	Very Poor			0	36
pin oak	Quercus palustris	NSH	Low	0.2	0.4	0.0	Sm. inc.	No change	Low	Rare	Poor	Very Poor	Infill +		2	37
Norway spruce	Picea abies	NSH	FIA	11.5	0.3	1.0	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	38
Atlantic white-cedar	Chamaecyparis thyoides	NSH	Low	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	39
shortleaf pine	Pinus echinata	WDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	40
slash pine	Pinus elliotii	NDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			0	41
longleaf pine	Pinus palustris	NSH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			0	42
Table Mountain pine	Pinus pungens	NSL	Low	0	0	0	Unknown	Unknown	High	Absent	Unknown	Unknown			0	43
pond pine	Pinus serotina	NSH	Medium	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat			3	44
loblolly pine	Pinus taeda	WDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate ++	Migrate ++	3	45
Virginia pine	Pinus virginiana	NDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	46
bald cypress	Taxodium distichum	NSH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	47

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Common Name	Scientific Name	Range	MR	%Cell	FIAsum	FIAiv	ChngCl45	ChngCl85	Adap	Abund	Capabil45	Capabil85	SHIFT45	SHIFT85	SSO	N
eastern hemlock	Tsuga canadensis	NSH	High	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat	Likely +	Likely +	3	48
striped maple	Acer pensylvanicum	NSL	Medium	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	49
silver maple	Acer saccharinum	NSH	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat		Migrate +	3	50
yellow birch	Betula alleghaniensis	NDL	High	0	0	0	New Habitat	Unknown	Medium	Absent	New Habitat	Unknown	Likely +		3	51
American hornbeam; musclev	Carpinus caroliniana	WSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Likely +	Likely +	3	52
water hickory	Carya aquatica	NSL	Medium	0	0	0	Unknown	New Habitat	Medium	Absent	Unknown	New Habitat			0	53
pecan	Carya illinoensis	NSH	Low	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat			3	54
shagbark hickory	Carya ovata	WSL	Medium	0	0	0	New Habitat	Unknown	Medium	Absent	New Habitat	Unknown	Likely +		3	55
black hickory	Carya texana	NDL	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			0	56
sugarberry	Celtis laevigata	NDH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			0	57
hackberry	Celtis occidentalis	WDH	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat			3	58
eastern redbud	Cercis canadensis	NSL	Low	0	0	0	Unknown	Unknown	Medium	Modeled	Unknown	Unknown			0	59
common persimmon	Diospyros virginiana	NSL	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat			3	60
green ash	Fraxinus pennsylvanica	WSH	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Likely +	Likely +	3	61
American holly	Ilex opaca	NSL	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	62
cucumbertree	Magnolia acuminata	NSL	Low	0	0	0	Unknown	Unknown	Medium	Modeled	Unknown	Unknown			0	63
sweetbay	Magnolia virginiana	NSL	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	64
bigleaf magnolia	Magnolia macrophylla	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	65
mountain or Fraser magnolia	Magnolia fraseri	NSL	Low	0	0	0	Unknown	Unknown	Low	Absent	Unknown	Unknown			0	66
water tupelo	Nyssa aquatica	NSH	Medium	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat			3	67
swamp tupelo	Nyssa biflora	NDH	Medium	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	68
eastern hophornbeam; ironw	Ostrya virginiana	WSL	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Likely +	Likely +	3	69
sourwood	Oxydendrum arboreum	NDL	High	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	70
redbay	Persea borbonia	NSL	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat			3	71
sycamore	Platanus occidentalis	NSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate +	3	72
eastern cottonwood	Populus deltoides	NSH	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Likely +	Likely +	3	73
southern red oak	Quercus falcata	WDL	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	74
laurel oak	Quercus laurifolia	NDH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	75
overcup oak	Quercus lyrata	NSL	Medium	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat			3	76
blackjack oak	Quercus marilandica	NSL	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	77
swamp chestnut oak	Quercus michauxii	NSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	78
water oak	Quercus nigra	WDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	79
willow oak	Quercus phellos	NSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	80
live oak	Quercus virginiana	NDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			0	81
bluejack oak	Quercus incana	NSL	Low	0	0	0	Unknown	Unknown	Medium	Modeled	Unknown	Unknown			0	82
winged elm	Ulmus alata	WDL	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	83
slippery elm	Ulmus rubra	WSL	Low	0	0	0	Unknown	Unknown	Medium	Modeled	Unknown	Unknown			0	84