

Current and Potential Future Habitat, Capability, and Migration

	sq. km	sq. mi	FIA Plots
Area of Region	13,720	5,297.4	150

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	13	21	Increase	21	24	Very Good	6	7	Likely	2	2
Hickory	8			Medium	31	48	No Change	25	22	Good	17	18	Infill	41	40
Maple	4	Abundant	2	Low	32	9	Decrease	18	18	Fair	11	10	Migrate	3	3
Oak	14	Common	23	FIA	2		New	9	9	Poor	15	14			
Pine	3	Rare	41				Unknown	5	5	Very Poor	14	15			
Other	35	Absent	11							FIA Only	2	2			
	66		77		78	78		78	78	Unknown	3	3			
											68	69			

Potential Changes in Climate Variables

Temperature (°F)

	Scenario	2009	2039	2069	2099	
Annual Average	CCSM45	53.3	54.3	55.5	55.7	
	CCSM85	53.3	54.5	56.1	57.7	
	GFDL45	53.3	55.5	56.1	56.7	
	GFDL85	53.3	55.0	57.0	59.2	
	HAD45	53.3	54.9	56.8	57.5	
HAD85	53.3	55.1	57.8	60.2		
Growing Season (May—Sep)	CCSM45	62.3	63.3	64.1	64.5	
	CCSM85	62.3	63.5	65.0	67.0	
	GFDL45	62.3	64.9	65.4	66.6	
	GFDL85	62.3	64.4	66.5	69.3	
	HAD45	62.3	64.4	66.2	66.7	
HAD85	62.3	64.6	68.3	70.4		
Coldest Month Average	CCSM45	39.7	41.2	41.9	42.0	
	CCSM85	39.7	41.4	42.2	43.1	
	GFDL45	39.7	42.1	42.1	42.1	
	GFDL85	39.7	40.6	41.2	41.6	
	HAD45	39.7	40.2	41.4	41.9	
HAD85	39.7	41.0	41.9	43.1		
Warmest Month Average	CCSM45	65.1	66.0	66.3	66.5	
	CCSM85	65.1	66.2	66.8	67.9	
	GFDL45	65.1	67.9	67.8	68.7	
	GFDL85	65.1	67.5	68.5	70.3	
	HAD45	65.1	67.9	69.0	69.0	
HAD85	65.1	68.3	70.5	71.1		

Precipitation (in)

	Scenario	2009	2039	2069	2099	
Annual Total	CCSM45	36.2	37.8	41.4	39.8	
	CCSM85	36.2	38.2	39.9	41.5	
	GFDL45	36.2	39.3	44.4	41.8	
	GFDL85	36.2	38.9	40.6	41.9	
	HAD45	36.2	35.3	36.8	39.2	
HAD85	36.2	37.3	33.1	36.5		
Growing Season (May—Sep)	CCSM45	12.8	12.9	13.4	12.9	
	CCSM85	12.8	12.0	12.1	12.1	
	GFDL45	12.8	14.1	16.8	15.1	
	GFDL85	12.8	14.8	15.7	16.2	
	HAD45	12.8	12.2	12.5	12.1	
HAD85	12.8	12.5	9.9	10.1		

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.

Cite as: Iverson, L.R.; Prasad, A.M.; Peters, M.P.; Matthews, S.N. 2019. Facilitating Adaptive Forest Management under Climate Change: A Spatially Specific Synthesis of 125 Species for Habitat Changes and Assisted Migration over the Eastern United States. *Forests*. 10(11): 989. <https://doi.org/10.3390/f10110989>.

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Common Name	Scientific Name	Range	MR	%Cell	FIAsum	FIAiv	ChngCl45	ChngCl85	Adap	Abund	Capabil45	Capabil85	SHIFT45	SHIFT85	SSO	N
sugarberry	Celtis laevigata	NDH	Medium	64.7	598.4	10.6	No change	No change	Medium	Abundant	Good	Good	Infill ++	Infill ++	1	1
sweetgum	Liquidambar styraciflua	WDH	High	45.5	502.5	10.7	No change	No change	Medium	Abundant	Good	Good	Infill ++	Infill ++	1	2
loblolly pine	Pinus taeda	WDH	High	23.8	449.0	20.0	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good	Infill ++	Infill ++	1	3
green ash	Fraxinus pennsylvanica	WSH	Low	62.4	363.8	7.3	No change	No change	Medium	Common	Fair	Fair	Infill +	Infill +	1	4
willow oak	Quercus phellos	NSL	Low	38.5	355.5	10.5	No change	No change	Medium	Common	Fair	Fair	Infill +	Infill +	1	5
water oak	Quercus nigra	WDH	High	43.6	308.5	7.8	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good	Infill ++	Infill ++	1	6
overcup oak	Quercus lyrata	NSL	Medium	37.8	234.6	8.7	Sm. inc.	Sm. inc.	Low	Common	Fair	Fair	Infill +	Infill +	1	7
water hickory	Carya aquatica	NSL	Medium	38.5	228.8	7.9	Sm. inc.	Sm. inc.	Medium	Common	Good	Good	Infill ++	Infill ++	1	8
American elm	Ulmus americana	WDH	Medium	52.4	224.7	6.4	Sm. inc.	Sm. inc.	Medium	Common	Good	Good	Infill ++	Infill ++	1	9
winged elm	Ulmus alata	WDL	Medium	49.1	205.2	5.8	Sm. inc.	Sm. inc.	Medium	Common	Good	Good	Infill ++	Infill ++	1	10
bald cypress	Taxodium distichum	NSH	Medium	15.8	157.7	11.4	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good	Infill ++	Infill ++	2	11
black willow	Salix nigra	NSH	Low	19.5	153.8	13.6	Lg. inc.	Lg. inc.	Low	Common	Good	Good	Infill ++	Infill ++	1	12
common persimmon	Diospyros virginiana	NSL	Low	21	121.1	4.4	No change	No change	High	Common	Good	Good	Infill ++	Infill ++	1	13
Nuttall oak	Quercus texana	NSH	Medium	30.5	120.3	6.4	Sm. inc.	Sm. inc.	High	Common	Very Good	Very Good			0	14
southern red oak	Quercus falcata	WDL	Medium	13.8	114.4	5.9	No change	No change	High	Common	Good	Good	Infill ++	Infill ++	1	15
eastern cottonwood	Populus deltoides	NSH	Low	13	104.4	10.0	Sm. dec.	Sm. dec.	Medium	Common	Poor	Poor	Infill +	Infill +	2	16
cherrybark oak; swamp red o	Quercus pagoda	NSL	Medium	21.6	101.1	3.1	Sm. inc.	Sm. inc.	Medium	Common	Good	Good	Infill ++	Infill ++	1	17
boxelder	Acer negundo	WSH	Low	17.4	87.2	5.5	No change	Sm. inc.	High	Common	Good	Very Good	Infill ++	Infill ++	2	18
pecan	Carya illinoensis	NSH	Low	21.5	87.1	3.5	Lg. inc.	Lg. inc.	Low	Common	Good	Good	Infill ++	Infill ++	2	19
honeylocust	Gleditsia triacanthos	NSH	Low	30	84.2	4.0	Lg. inc.	Lg. inc.	High	Common	Very Good	Very Good	Infill ++	Infill ++	1	20
cedar elm	Ulmus crassifolia	NDH	Medium	31.4	83.1	4.8	Lg. inc.	Lg. inc.	Low	Common	Good	Good	Infill ++	Infill ++	1	21
sycamore	Platanus occidentalis	NSL	Low	10.7	80.9	4.4	No change	No change	Medium	Common	Fair	Fair	Infill +	Infill +	2	22
white oak	Quercus alba	WDH	Medium	7.2	63.0	4.4	No change	No change	High	Common	Good	Good	Infill ++	Infill ++	2	23
slippery elm	Ulmus rubra	WSL	Low	28.6	61.1	3.0	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good	Infill ++	Infill ++	1	24
water elm	Planera aquatica	NSL	Low	6.2	51.5	4.9	No change	No change	Medium	Common	Fair	Fair	Infill +	Infill +	2	25
red maple	Acer rubrum	WDH	High	21.4	38.7	2.0	Lg. inc.	Lg. inc.	High	Rare	Good	Good	Infill ++	Infill ++	1	26
post oak	Quercus stellata	WDH	High	13.5	30.5	1.9	Lg. inc.	Lg. inc.	High	Rare	Good	Good	Infill ++	Infill ++	2	27
swamp chestnut oak	Quercus michauxii	NSL	Low	3.2	29.6	5.0	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	2	28
water tupelo	Nyssa aquatica	NSH	Medium	2.3	23.2	4.2	No change	No change	Low	Rare	Very Poor	Very Poor			2	29
mockernut hickory	Carya alba	WDL	Medium	10.8	21.5	1.1	Lg. inc.	Lg. inc.	High	Rare	Good	Good	Infill ++	Infill ++	1	30
laurel oak	Quercus laurifolia	NDH	Medium	4.3	18.9	4.2	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	2	31
American beech	Fagus grandifolia	WDH	High	0.3	18.7	9.8	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	2	32
blackgum	Nyssa sylvatica	WDL	Medium	2	17.5	4.4	No change	No change	High	Rare	Fair	Fair	Infill +	Infill +	2	33
eastern hophornbeam; ironw	Ostrya virginiana	WSL	Low	6.3	16.4	1.7	No change	Sm. dec.	High	Rare	Fair	Poor	Infill +	Infill +	1	34
hackberry	Celtis occidentalis	WDH	Medium	2.1	15.8	4.0	Sm. dec.	No change	High	Rare	Poor	Fair	Infill +	Infill +	2	35
shagbark hickory	Carya ovata	WSL	Medium	3.1	15.7	2.3	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			2	36
black oak	Quercus velutina	WDH	High	4.8	15.0	2.6	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			2	37
shortleaf pine	Pinus echinata	WDH	High	1.9	14.5	1.3	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	2	38
bitternut hickory	Carya cordiformis	WSL	Low	0.7	11.7	16.1	Sm. dec.	Sm. dec.	High	Rare	Poor	Poor	Infill +		2	39
American hornbeam; muscle	Carpinus caroliniana	WSL	Low	4.9	11.1	2.0	Sm. inc.	Sm. inc.	Medium	Rare	Fair	Fair	Infill +	Infill +	1	40
pignut hickory	Carya glabra	WDL	Medium	2.7	9.9	0.8	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			2	41
eastern redbud	Cercis canadensis	NSL	Low	1.7	9.8	4.2	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			2	42
silver maple	Acer saccharinum	NSH	Low	5.2	9.3	4.4	Sm. dec.	Sm. dec.	High	Rare	Poor	Poor			0	43
flowering dogwood	Cornus florida	WDL	Medium	9.4	8.2	0.9	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	1	44
black cherry	Prunus serotina	WDL	Medium	9.1	7.6	1.6	No change	No change	Low	Rare	Very Poor	Very Poor			2	45
black locust	Robinia pseudoacacia	NDH	Low	2.1	7.5	2.6	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	46
slash pine	Pinus elliotii	NDH	High	0.7	7.4	9.9	Sm. inc.	Lg. inc.	Medium	Rare	Fair	Good	Infill +		2	47

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Common Name	Scientific Name	Range	MR	%Cell	FIAsum	FIAiv	ChngCl45	ChngCl85	Adap	Abund	Capabil45	Capabil85	SHIFT45	SHIFT85	SSO	N
blackjack oak	Quercus marilandica	NSL	Medium	0.3	7.4	4.3	Sm. inc.	Lg. inc.	High	Rare	Good	Good			2	48
white ash	Fraxinus americana	WDL	Medium	5.7	7.3	1.2	No change	No change	Low	Rare	Very Poor	Very Poor			2	49
swamp white oak	Quercus bicolor	NSL	Low	1.4	6.6	4.4	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	50
waterlocust	Gleditsia aquatica	NSLX	FIA	4.5	6.2	1.3	Unknown	Unknown	Medium	Rare	FIA Only	FIA Only			0	51
Shumard oak	Quercus shumardii	NSL	Low	8.1	5.5	0.8	No change	Sm. inc.	High	Rare	Fair	Good	Infill +	Infill ++	2	52
river birch	Betula nigra	NSL	Low	0.7	5.4	1.2	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	53
sourwood	Oxydendrum arboreum	NDL	High	1	4.1	2.3	Sm. dec.	Sm. dec.	High	Rare	Poor	Poor			0	54
black hickory	Carya texana	NDL	High	0.7	4.0	5.5	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	2	55
shellbark hickory	Carya laciniosa	NSL	Low	0.6	3.7	4.0	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	56
swamp tupelo	Nyssa biflora	NDH	Medium	0.6	2.9	3.5	Sm. dec.	Sm. dec.	Low	Rare	Very Poor	Very Poor			0	57
American basswood	Tilia americana	WSL	Medium	0.1	2.4	0.5	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	58
sassafras	Sassafras albidum	WSL	Low	1.5	2.3	1.6	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			2	59
eastern redcedar	Juniperus virginiana	WDH	Medium	0	1.8	0.1	No change	Sm. inc.	Medium	Rare	Poor	Fair		Infill +	2	60
red mulberry	Morus rubra	NSL	Low	3.3	1.0	0.5	Very Lg. dec.	Lg. dec.	Medium	Rare	Lost	Very Poor			0	61
American holly	Ilex opaca	NSL	Medium	0.7	0.8	1.0	Sm. inc.	Sm. inc.	Medium	Rare	Fair	Fair	Infill +	Infill +	2	62
wild plum	Prunus americana	NSLX	FIA	0.1	0.7	0.1	Unknown	Unknown	Medium	Rare	FIA Only	FIA Only			0	63
serviceberry	Amelanchier spp.	NSL	Low	0.3	0.3	0.2	No change	No change	Medium	Rare	Poor	Poor			0	64
pawpaw	Asimina triloba	NSL	Low	1.5	0.2	0.4	No change	No change	Medium	Rare	Poor	Poor			0	65
florida maple	Acer barbatum	NSL	Low	2.9	0.0	0.2	Lg. dec.	Lg. dec.	High	Rare	Poor	Poor			0	66
Atlantic white-cedar	Chamaecyparis thyoides	NSH	Low	0	0	0	Unknown	Unknown	Low	Absent	Unknown	Unknown			0	67
ashe juniper	Juniperus ashei	NDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			0	68
longleaf pine	Pinus palustris	NSH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate ++	Migrate ++	3	69
striped maple	Acer pensylvanicum	NSL	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	70
cittamwood/gum bumelia	Sideroxylon lanuginosum ssp.	NSL	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	71
Osage-orange	Maclura pomifera	NDH	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Likely +	Likely +	3	72
southern magnolia	Magnolia grandiflora	NSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Likely +	Likely +	3	73
bigleaf magnolia	Magnolia macrophylla	NSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	74
pin cherry	Prunus pensylvanica	NSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	75
scarlet oak	Quercus coccinea	WDL	Medium	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	76
northern red oak	Quercus rubra	WDH	Medium	0	0	0	Unknown	Unknown	High	Modeled	Unknown	Unknown			0	77
live oak	Quercus virginiana	NDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate ++	Migrate ++	3	78