

Current and Potential Future Habitat, Capability, and Migration

	sq. km	sq. mi	FIA Plots
Area of Region	31,148	12,026	943

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	4			High	18	26	Increase	26	31	Very Good	13	15	Likely	2	2
Hickory	7			Medium	39	60	No Change	26	25	Good	12	11	Infill	28	30
Maple	4	Abundant	4	Low	38	12	Decrease	26	22	Fair	8	14	Migrate	2	2
Oak	19	Common	21	FIA	8		New	8	10	Poor	26	21			
Pine	7	Rare	61				Unknown	17	15	Very Poor	19	16			
Other	45	Absent	16							FIA Only	6	6			
	86		102		103	98		103	103	Unknown	9	7			
											93	90			

Potential Changes in Climate Variables

Temperature (°F)

	Scenario	2009	2039	2069	2099	
Annual Average	CCSM45	58.1	59.5	61.2	61.2	
	CCSM85	58.1	59.7	61.7	64.0	
	GFDL45	58.1	60.3	62.1	62.8	
	GFDL85	58.1	60.4	63.0	66.0	
	HAD45	58.1	59.8	62.0	63.3	
	HAD85	58.1	60.1	63.0	66.3	
Growing Season (May—Sep)	CCSM45	69.5	70.8	72.2	72.5	
	CCSM85	69.5	70.8	72.9	75.7	
	GFDL45	69.5	71.8	73.6	74.8	
	GFDL85	69.5	72.0	74.8	78.2	
	HAD45	69.5	71.7	73.7	75.1	
	HAD85	69.5	71.7	75.5	78.9	
Coldest Month (Average)	CCSM45	41.1	43.1	43.7	43.7	
	CCSM85	41.1	42.9	43.7	44.8	
	GFDL45	41.1	43.7	44.0	44.5	
	GFDL85	41.1	42.8	43.6	44.3	
	HAD45	41.1	41.4	42.8	43.2	
	HAD85	41.1	42.0	42.8	44.2	
Warmest Month (Average)	CCSM45	73.5	75.0	75.8	75.9	
	CCSM85	73.5	75.2	76.5	77.8	
	GFDL45	73.5	75.5	76.3	77.1	
	GFDL85	73.5	75.9	77.3	79.3	
	HAD45	73.5	76.1	77.2	77.7	
	HAD85	73.5	76.4	78.7	80.5	

Precipitation (in)

	Scenario	2009	2039	2069	2099	
Annual Total	CCSM45	40.5	44.6	45.6	47.4	
	CCSM85	40.5	44.5	46.6	51.6	
	GFDL45	40.5	44.7	47.8	50.1	
	GFDL85	40.5	44.0	49.8	49.4	
	HAD45	40.5	42.1	43.5	43.2	
	HAD85	40.5	44.4	41.0	41.2	
Growing Season (May—Sep)	CCSM45	20.3	24.2	24.7	25.7	
	CCSM85	20.3	22.6	24.3	26.9	
	GFDL45	20.3	23.8	25.8	26.8	
	GFDL85	20.3	23.0	27.8	27.6	
	HAD45	20.3	20.6	21.1	20.7	
	HAD85	20.3	22.2	19.1	17.5	

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
loblolly pine	Pinus taeda	WDH	High	94.3	4233.2	39.0	No change	Sm. dec.	Medium	Abundant	Good	Fair			1	1
sweetgum	Liquidambar styraciflua	WDH	High	87.5	1063.7	10.6	No change	No change	Medium	Abundant	Good	Good			1	2
red maple	Acer rubrum	WDH	High	83.6	813.1	8.6	No change	No change	High	Abundant	Very Good	Very Good			1	3
water oak	Quercus nigra	WDH	High	76.3	575.5	6.8	Sm. inc.	Sm. inc.	Medium	Abundant	Very Good	Very Good			1	4
longleaf pine	Pinus palustris	NSH	Medium	26.8	459.4	15.0	Sm. inc.	Lg. inc.	Medium	Common	Good	Very Good			1	5
swamp tupelo	Nyssa biflora	NDH	Medium	54.7	408.4	7.0	Sm. inc.	Sm. inc.	Low	Common	Fair	Fair			1	6
yellow-poplar	Liriodendron tulipifera	WDH	High	37.9	228.2	5.1	Sm. dec.	Lg. dec.	High	Common	Fair	Fair			1	7
pond pine	Pinus serotina	NSH	Medium	17.7	204.5	9.3	No change	No change	Low	Common	Poor	Poor			0	8
laurel oak	Quercus laurifolia	NDH	Medium	45.8	183.2	3.6	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good			1	9
black cherry	Prunus serotina	WDL	Medium	36	127.1	3.1	Sm. inc.	Sm. inc.	Low	Common	Fair	Fair			1	10
turkey oak	Quercus laevis	NSH	Medium	12.4	107.0	6.4	No change	No change	High	Common	Good	Good	Infill ++	Infill ++	1	11
willow oak	Quercus phellos	NSL	Low	29.6	100.8	3.0	Sm. inc.	Sm. inc.	Medium	Common	Good	Good			1	12
blackgum	Nyssa sylvatica	WDL	Medium	44	96.3	2.0	Lg. inc.	Lg. inc.	High	Common	Very Good	Very Good			1	13
green ash	Fraxinus pennsylvanica	WSH	Low	26.5	92.5	3.0	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good			1	14
American holly	Ilex opaca	NSL	Medium	39.5	86.5	2.1	Sm. inc.	Sm. inc.	Medium	Common	Good	Good			1	15
slash pine	Pinus elliotii	NDH	High	10	86.1	7.1	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good	Infill ++	Infill ++	1	16
white oak	Quercus alba	WDH	Medium	26.7	85.5	2.7	Sm. inc.	Sm. inc.	High	Common	Very Good	Very Good			1	17
water tupelo	Nyssa aquatica	NSH	Medium	11.3	81.5	7.4	No change	No change	Low	Common	Poor	Poor	Infill +	Infill +	0	18
southern red oak	Quercus falcata	WDL	Medium	24.9	81.1	2.9	Lg. inc.	Lg. inc.	High	Common	Very Good	Very Good			1	19
sweetbay	Magnolia virginiana	NSL	Medium	34.8	75.4	2.0	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good			1	20
post oak	Quercus stellata	WDH	High	30.4	71.3	2.1	Lg. inc.	Lg. inc.	High	Common	Very Good	Very Good			1	21
bald cypress	Taxodium distichum	NSH	Medium	18.8	70.6	3.7	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good			1	22
redbay	Persea borbonia	NSL	Low	38.7	69.8	1.7	Sm. inc.	Sm. inc.	High	Common	Very Good	Very Good			1	23
mockernut hickory	Carya alba	WDL	Medium	25.7	67.4	2.3	Lg. inc.	Lg. inc.	High	Common	Very Good	Very Good			1	24
blackjack oak	Quercus marilandica	NSL	Medium	10.8	57.5	4.1	No change	Sm. inc.	High	Common	Good	Very Good	Infill ++	Infill ++	1	25
swamp chestnut oak	Quercus michauxii	NSL	Low	16.5	47.7	2.8	Sm. dec.	No change	Medium	Rare	Very Poor	Poor			1	26
loblolly-bay	Gordonia lasianthus	NSH	Medium	8.3	45.9	6.0	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	1	27
American elm	Ulmus americana	WDH	Medium	16.8	41.9	2.1	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			1	28
black willow	Salix nigra	NSH	Low	10.3	40.7	3.5	Sm. inc.	Lg. inc.	Low	Rare	Poor	Fair			1	29
live oak	Quercus virginiana	NDH	High	6.6	37.2	4.7	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good	Infill ++	Infill ++	2	30
flowering dogwood	Cornus florida	WDL	Medium	18.6	36.0	1.6	No change	No change	Medium	Rare	Poor	Poor			1	31
shortleaf pine	Pinus echinata	WDH	High	5.5	33.6	3.8	Sm. inc.	Sm. inc.	Medium	Rare	Fair	Fair	Infill +	Infill +	2	32
American hornbeam; musclev	Carpinus caroliniana	WSL	Low	15.1	32.3	2.0	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			1	33
river birch	Betula nigra	NSL	Low	7.4	27.7	3.5	No change	Sm. inc.	Medium	Rare	Poor	Fair	Infill +	Infill +	1	34
eastern redcedar	Juniperus virginiana	WDH	Medium	6.3	26.6	2.5	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	2	35
pond cypress	Taxodium ascendens	NSH	Medium	7.5	24.8	2.8	Sm. inc.	Lg. inc.	Medium	Rare	Fair	Good	Infill +	Infill ++	2	36
pignut hickory	Carya glabra	WDL	Medium	10.5	24.6	1.7	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	1	37
winged elm	Ulmus alata	WDL	Medium	8.9	23.0	1.9	No change	Sm. inc.	Medium	Rare	Poor	Fair	Infill +	Infill +	1	38
sugarberry	Celtis laevigata	NDH	Medium	5.5	23.0	3.7	Sm. inc.	Lg. inc.	Medium	Rare	Fair	Good	Infill +	Infill ++	1	39
common persimmon	Diospyros virginiana	NSL	Low	14.9	18.9	1.1	Lg. dec.	Lg. dec.	High	Rare	Poor	Poor			1	40
northern red oak	Quercus rubra	WDH	Medium	3.6	16.0	3.1	Sm. dec.	Sm. dec.	High	Rare	Poor	Poor	Infill +		2	41
cherrybark oak; swamp red o	Quercus pagoda	NSL	Medium	5.3	14.9	2.7	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	2	42
scarlet oak	Quercus coccinea	WDL	Medium	5.1	14.8	2.3	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			2	43
slippery elm	Ulmus rubra	WSL	Low	10.2	14.4	1.4	Lg. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	44
black oak	Quercus velutina	WDH	High	5.8	13.1	1.8	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	2	45
boxelder	Acer negundo	WSH	Low	2.8	13.0	4.4	Sm. dec.	Sm. dec.	High	Rare	Poor	Poor		Infill +	2	46
sycamore	Platanus occidentalis	NSL	Low	4.1	12.7	2.1	No change	No change	Medium	Rare	Poor	Poor	Infill +	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
sourwood	Oxydendrum arboreum	NDL	High	6.8	10.6	1.2	No change	No change	High	Rare	Fair	Fair	Infill +	Infill +	1	48
water hickory	Carya aquatica	NSL	Medium	5.3	9.9	1.8	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	2	49
overcup oak	Quercus lyrata	NSL	Medium	4.6	8.9	1.7	No change	No change	Low	Rare	Very Poor	Very Poor			2	50
bluejack oak	Quercus incana	NSL	Low	5.6	8.9	1.3	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	1	51
Atlantic white-cedar	Chamaecyparis thyoides	NSH	Low	1.9	8.6	4.4	Sm. dec.	Sm. dec.	Low	Rare	Very Poor	Very Poor			0	52
water elm	Planera aquatica	NSL	Low	2.7	7.9	2.7	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			2	53
hackberry	Celtis occidentalis	WDH	Medium	0.9	7.2	5.4	Sm. dec.	Sm. dec.	High	Rare	Poor	Poor	Infill +	Infill +	2	54
sassafras	Sassafras albidum	WSL	Low	7.9	7.1	0.9	No change	Sm. inc.	Medium	Rare	Poor	Fair	Infill +	Infill +	1	55
bitternut hickory	Carya cordiformis	WSL	Low	1.4	6.4	4.0	Sm. dec.	Sm. dec.	High	Rare	Poor	Poor			0	56
Carolina ash	Fraxinus caroliniana	NSL	FIA	1.3	5.6	4.4	Unknown	Unknown	NA	Rare	FIA Only	FIA Only			0	57
eastern cottonwood	Populus deltoides	NSH	Low	2.3	5.4	1.4	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	58
white ash	Fraxinus americana	WDL	Medium	2.3	4.6	1.1	No change	No change	Low	Rare	Very Poor	Very Poor			2	59
American beech	Fagus grandifolia	WDH	High	2.2	4.5	2.0	No change	Sm. inc.	Medium	Rare	Poor	Fair	Infill +	Infill +	2	60
eastern redbud	Cercis canadensis	NSL	Low	2.1	4.3	1.5	Lg. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			2	61
sand hickory	Carya pallida	NSL	FIA	1.5	4.1	2.6	Unknown	Unknown	NA	Rare	FIA Only	FIA Only			0	62
southern magnolia	Magnolia grandiflora	NSL	Low	2	4.1	2.1	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good	Infill ++	Infill ++	2	63
Virginia pine	Pinus virginiana	NDH	High	2.4	3.5	1.3	Sm. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			2	64
pecan	Carya illinoensis	NSH	Low	1.7	3.1	1.9	Sm. dec.	No change	Low	Rare	Very Poor	Very Poor			2	65
red mulberry	Morus rubra	NSL	Low	3	2.9	1.0	Sm. dec.	No change	Medium	Rare	Very Poor	Poor		Infill +	2	66
eastern hophornbeam; ironw	Ostrya virginiana	WSL	Low	1.6	2.5	1.5	Sm. inc.	Sm. inc.	High	Rare	Good	Good	Infill ++	Infill ++	2	67
black walnut	Juglans nigra	WDH	Low	1.6	2.3	1.4	Lg. dec.	Very Lg. dec.	Medium	Rare	Very Poor	Lost			0	68
waterlocust	Gleditsia aquatica	NSLX	FIA	0.3	1.7	5.4	Unknown	Unknown	Medium	Rare	FIA Only	FIA Only			0	69
black locust	Robinia pseudoacacia	NDH	Low	0.7	1.6	1.1	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	70
florida maple	Acer barbatum	NSL	Low	0.9	1.6	1.5	No change	No change	High	Rare	Fair	Fair	Infill +	Infill +	2	71
honeylocust	Gleditsia triacanthos	NSH	Low	0.7	1.1	1.8	Sm. dec.	No change	High	Rare	Poor	Fair		Infill +	2	72
wild plum	Prunus americana	NSLX	FIA	1.3	1.0	0.8	Unknown	Unknown	Medium	Rare	FIA Only	FIA Only			0	73
pumpkin ash	Fraxinus profunda	NSH	FIA	0.7	0.8	1.2	Unknown	Unknown	NA	Rare	FIA Only	FIA Only			0	74
Shumard oak	Quercus shumardii	NSL	Low	0.7	0.7	1.1	Sm. dec.	No change	High	Rare	Poor	Fair	Infill +	Infill +	2	75
swamp white oak	Quercus bicolor	NSL	Low	0.7	0.6	1.0	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	76
bigleaf magnolia	Magnolia macrophylla	NSL	Low	0.3	0.5	1.6	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	77
pitch pine	Pinus rigida	NSH	High	0.3	0.4	1.3	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	78
white mulberry	Morus alba	NSL	FIA	0.3	0.4	1.3	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	79
American basswood	Tilia americana	WSL	Medium	0.2	0.3	0.6	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	80
pawpaw	Asimina triloba	NSL	Low	0.5	0.2	0.3	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	81
shagbark hickory	Carya ovata	WSL	Medium	0.2	0.2	0.6	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	2	82
bear oak; scrub oak	Quercus ilicifolia	NSLX	FIA	0.3	0.2	0.7	Unknown	Unknown	Medium	Rare	FIA Only	FIA Only			0	83
ailanthus	Ailanthus altissima	NSL	FIA	0.3	0.2	0.6	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	84
serviceberry	Amelanchier spp.	NSL	Low	0.4	0.2	0.2	No change	No change	Medium	Rare	Poor	Poor			0	85
sugar maple	Acer saccharum	WDH	High	0.2	0.1	0.2	Lg. dec.	Lg. dec.	High	Rare	Poor	Poor			0	86
sand pine	Pinus clausa	NDH	High	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat	Migrate ++	Migrate +	3	87
spruce pine	Pinus glabra	NSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +		3	88
striped maple	Acer pensylvanicum	NSL	Medium	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	89
silver maple	Acer saccharinum	NSH	Low	0	0	0	Unknown	Unknown	High	Absent	Unknown	Unknown			0	90
cittamwood/gum bumelia	Sideroxylon lanuginosum ssp.	NSL	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat			0	91
shellbark hickory	Carya laciniosa	NSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Likely +	Likely +	3	92
black hickory	Carya texana	NDL	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			0	93
black ash	Fraxinus nigra	WSH	Medium	0	0	0	Unknown	New Habitat	Low	Absent	Unknown	New Habitat			3	94

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silverbell	Halesia spp.	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	95
Osage-orange	Maclura pomifera	NDH	Medium	0	0	0	Unknown	New Habitat	High	Absent	Unknown	New Habitat		Migrate +	3	96
cucumbertree	Magnolia acuminata	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	97
pin cherry	Prunus pensylvanica	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	98
chinkapin oak	Quercus muehlenbergii	NSL	Medium	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	99
Nuttall oak	Quercus texana	NSH	Medium	0	0	0	Unknown	Unknown	High	Modeled	Unknown	Unknown			0	100
chestnut oak	Quercus prinus	NDH	High	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Likely +	Likely +	3	101
cabbage palmetto	Sabal palmetto	NDH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			0	102
cedar elm	Ulmus crassifolia	NDH	Medium	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat			2	103