ua 80400

	sq. km	sq. mi	FIA Plots
Area of Region	8,550.4	3,301.3	78

Species Information

The columns below provide breif 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 Reliability	Adaptability	Potential Change in Habitat Suitability	Scenario RCP45	Scenario RCP85	Capability to Cope or Persist	Scenario RCP45	Scenario RCP85	Migration Potential	SHIFT RCP45	SHIFT RCP85
Ash	0														
Hickory	0		Abundance		Reliability	Adaptability		RCP45	RCP85		RCP45	RCP85		RCP45	RCP85
Maple	1	Abundant	0	High	7	6	Increase	9	8	Very Good	0	1	Likely	4	4
Oak	2	Common	7	Medium	19	22	No Change	3	3	Good	8	6	Infill	8	7
Pine	3	Rare	8	Low	8	6	Decrease	3	4	Fair	3	3	Migrate	4	4
Other	9	Absent	14	FIA	0		New	9	9	Poor	3	4		16	15
	15		**29**		**34**	**34**	Unknown	10	10	Very Poor	1	1			
								34	**34**	FIA Only	0	0			
										Unknown	10	10			
											25	**25**			

Potential Changes in Climate Variables

Temperature (°F)

	Scenario	2009	2039	2069	2099	
Annual	CCSM45	73.0	74.3	75.6	75.6	
Average	CCSM85	73.0	74.4	76.4	78.5	
	GFDL45	73.0	77.5	76.9	77.8	
	GFDL85	73.0	75.2	78.0	81.1	
	HAD45	73.0	74.3	76.3	77.3	
	HAD85	73.0	75.0	77.0	80.2	
Growing	CCSM45	80.3	81.4	82.5	82.7	
Season	CCSM85	80.3	81.5	83.6	85.8	
May—Sep	GFDL45	80.3	84.9	84.1	85.2	
	GFDL85	80.3	82.5	85.2	88.6	
	HAD45	80.3	82.2	83.7	84.8	
	HAD85	80.3	82.6	85.1	88.0	
Coldest	CCSM45	60.8	62.5	63.4	63.2	
Month	CCSM85	60.8	61.9	62.7	64.2	
Average	GFDL45	60.8	63.2	63.6	64.2	
	GFDL85	60.8	63.0	64.2	65.3	
	HAD45	60.8	60.9	62.0	62.4	
	HAD85	60.8	61.4	62.2	64.0	
Warmest	CCSM45	82.3	83.4	84.1	84.0	
Month	CCSM85	82.3	83.5	84.7	86.0	
Average	GFDL45	82.3	84.5	85.4	86.0	
	GFDL85	82.3	84.6	86.2	87.9	
	HAD45	82.3	84.2	84.9	85.4	
	HAD85	82.3	84.3	85.7	87.0	

Precipitation (in)

	Scenario	2009	2039	2069	2099	
Annual	CCSM45	50.3	52.3	51.0	55.3	
Total	CCSM85	50.3	52.1	51.1	48.6	
	GFDL45	50.3	57.7	59.0	61.3	
	GFDL85	50.3	54.3	62.6	57.4	
	HAD45	50.3	51.3	50.8	50.7	
	HAD85	50.3	46.7	49.7	46.8	
Growing	CCSM45	31.1	32.6	30.7	34.2	
Season	CCSM85	31.1	32.8	31.8	28.5	
May—Sep	GFDL45	31.1	34.2	34.2	33.4	
	GFDL85	31.1	32.7	35.4	32.1	
	HAD45	31.1	31.2	30.1	27.8	
	HAD85	31.1	28.4	26.8	25.3	

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.

ua 80400

U.S. Census Bureau Urban Areas
Climate Change Atlas Tree Species
Current and Potential Future Habitat, Capability, and Migration

Common Name	Scientific Name	Range	MR	%Cell	FIAsum	FIAiv	ChngCl45	ChngCl85	Adap	Abund	Capabil45	Capabil85	SHIFT45	SHIFT85	SSO	N
slash pine	Pinus elliottii	NDH	High	68	385.7	35.0	Sm. inc.	No change	Medium	Common	Good	Fair			1	1
cabbage palmetto	Sabal palmetto	NDH	Medium	81.2	297.5	25.4	Sm. inc.	Sm. inc.	Medium	Common	Good	Good			0	2
pond cypress	Taxodium ascendens	NSH	Medium	12.9	282.8	51.4	Sm. inc.	Sm. inc.	Medium	Common	Good	Good	Infill ++	Infill ++	1	3
live oak	Quercus virginiana	NDH	High	60.1	163.6	15.5	Sm. inc.	Lg. inc.	Medium	Common	Good	Very Good			1	4
laurel oak	Quercus laurifolia	NDH	Medium	63.8	122.2	8.6	No change	Sm. dec.	Medium	Common	Fair	Poor			1	5
longleaf pine	Pinus palustris	NSH	Medium	23.2	120.7	23.4	Sm. dec.	Sm. dec.	Medium	Common	Poor	Poor	Infill +	Infill +	0	6
red maple	Acer rubrum	WDH	High	16.4	98.9	17.0	No change	No change	High	Common	Good	Good	Infill ++	Infill ++	1	7
sweetbay	Magnolia virginiana	NSL	Medium	5.8	41.4	16.2	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	2	8
bald cypress	Taxodium distichum	NSH	Medium	10.5	7.4	4.0	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good	Infill ++	Infill ++	1	9
American elm	Ulmus americana	WDH	Medium	10.5	6.0	3.9	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good	Infill ++	Infill ++	2	10
redbay	Persea borbonia	NSL	Low	14.5	3.5	1.8	Lg. inc.	Lg. inc.	High	Rare	Good	Good			1	11
swamp tupelo	Nyssa biflora	NDH	Medium	9.4	3.4	4.9	Lg. inc.	Lg. inc.	Low	Rare	Fair	Fair	Infill +	Infill +	2	12
sweetgum	Liquidambar styraciflua	WDH	High	4.7	2.4	7.1	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	13
sand pine	Pinus clausa	NDH	High	0.7	0.3	0.1	Lg. inc.	Lg. inc.	Low	Rare	Fair	Fair	Infill +		2	14
eastern hophornbeam; ironw	Ostrya virginiana	WSL	Low	4.7	0.2	0.4	Lg. dec.	Lg. dec.	High	Rare	Poor	Poor			0	15
balsam fir	Abies balsamea	NDH	High	0	0	0	Unknown	Unknown	Low	Modeled	Unknown	Unknown			0	16
pond pine	Pinus serotina	NSH	Medium	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat	Likely +	Likely +	3	17
striped maple	Acer pensylvanicum	NSL	Medium	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	18
serviceberry	Amelanchier spp.	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	19
pignut hickory	Carya glabra	WDL	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	20
sugarberry	Celtis laevigata	NDH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Likely +	Likely +	3	21
green ash	Fraxinus pennsylvanica	WSH	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	22
loblolly-bay	Gordonia lasianthus	NSH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Likely +	Likely +	3	23
silverbell	Halesia spp.	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	24
American holly	Ilex opaca	NSL	Medium	0	0	0	Unknown	Unknown	Medium	Modeled	Unknown	Unknown			0	25
Osage-orange	Maclura pomifera	NDH	Medium	0	0	0	Unknown	Unknown	High	Modeled	Unknown	Unknown			0	26
blackgum	Nyssa sylvatica	WDL	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	27
black cherry	Prunus serotina	WDL	Medium	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	28
turkey oak	Quercus laevis	NSH	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat			3	29
water oak	Quercus nigra	WDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Likely +	Likely +	3	30
willow oak	Quercus phellos	NSL	Low	0	0	0	Unknown	Unknown	Medium	Modeled	Unknown	Unknown			0	31
black locust	Robinia pseudoacacia	NDH	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	32
American mountain-ash	Sorbus americana	NSL	Low	0	0	0	Unknown	Unknown	Low	Absent	Unknown	Unknown			0	33
winged elm	Ulmus alata	WDL	Medium	0	0	0	Unknown	Unknown	Medium	Modeled	Unknown	Unknown			0	34