

One x One Degree
Climate Change Atlas Tree Species
 Current and Potential Future Habitat, Capability, and Migration

	sq. km	sq. mi	FIA Plots
Area of Region	9,941.4	3,838.4	17

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	0			High	4	6	Increase	4	4	Very Good	0	0	Likely	4	4
Hickory	0			Medium	12	17	No Change	1	1	Good	4	4	Infill	5	5
Maple	0	Abundant	0	Low	10	3	Decrease	5	5	Fair	0	0	Migrate	3	4
Oak	4	Common	1	FIA	1		New	11	11	Poor	4	4		12	13
Pine	0	Rare	10				Unknown	6	6	Very Poor	2	2			
Other	7	Absent	15					27	27	FIA Only	0	0			
	11		26		27	26				Unknown	5	5			
											15	15			

Potential Changes in Climate Variables

Temperature (°F)

	Scenario	2009	2039	2069	2099	
Annual Average	CCSM45	57.7	59.5	61.3	61.9	
	CCSM85	57.7	60.1	62.0	65.0	
	GFDL45	57.7	64.0	62.6	64.0	
	GFDL85	57.7	60.7	63.8	68.0	
	HAD45	57.7	60.1	62.9	63.9	
	HAD85	57.7	60.4	65.1	67.9	
Growing Season (May—Sep)	CCSM45	74.8	76.9	79.0	79.6	
	CCSM85	74.8	77.6	79.6	83.2	
	GFDL45	74.8	83.3	80.9	83.3	
	GFDL85	74.8	78.8	82.5	87.8	
	HAD45	74.8	76.8	79.2	80.0	
	HAD85	74.8	77.5	82.4	84.7	
Coldest Month Average	CCSM45	33.3	35.3	36.2	37.0	
	CCSM85	33.3	35.6	36.1	37.8	
	GFDL45	33.3	36.8	36.9	37.3	
	GFDL85	33.3	34.5	35.8	36.6	
	HAD45	33.3	34.5	36.6	36.5	
	HAD85	33.3	36.4	38.6	40.2	
Warmest Month Average	CCSM45	81.6	83.8	85.5	85.9	
	CCSM85	81.6	84.9	85.9	88.1	
	GFDL45	81.6	86.5	87.5	89.4	
	GFDL85	81.6	86.5	88.3	92.7	
	HAD45	81.6	83.3	84.8	85.0	
	HAD85	81.6	84.9	86.9	88.2	

Precipitation (in)

	Scenario	2009	2039	2069	2099	
Annual Total	CCSM45	24.9	24.9	24.7	24.1	
	CCSM85	24.9	25.0	26.5	25.9	
	GFDL45	24.9	25.9	28.5	26.8	
	GFDL85	24.9	26.4	28.0	26.4	
	HAD45	24.9	27.6	25.9	27.2	
	HAD85	24.9	25.3	22.8	27.2	
Growing Season (May—Sep)	CCSM45	14.5	13.1	13.0	12.8	
	CCSM85	14.5	13.9	14.4	13.9	
	GFDL45	14.5	14.9	16.6	15.4	
	GFDL85	14.5	16.0	17.0	15.6	
	HAD45	14.5	16.0	15.8	16.1	
	HAD85	14.5	13.9	12.5	14.7	

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.

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
eastern redcedar	Juniperus virginiana	WDH	Medium	26.1	252.5	55.8	Sm. dec.	Sm. dec.	Medium	Common	Poor	Poor	Infill +	Infill +	0	1
black locust	Robinia pseudoacacia	NDH	Low	6.4	24.7	37.5	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	2	2
Siberian elm	Ulmus pumila	NDH	FIA	4.5	21.4	36.1	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	3
American elm	Ulmus americana	WDH	Medium	12.9	12.5	9.5	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good	Infill ++	Infill ++	2	4
bur oak	Quercus macrocarpa	NDH	Medium	3.3	9.0	3.6	Sm. dec.	Sm. dec.	High	Rare	Poor	Poor			0	5
Osage-orange	Maclura pomifera	NDH	Medium	2.4	5.4	12.7	Sm. dec.	Sm. dec.	High	Rare	Poor	Poor	Infill +	Infill +	2	6
post oak	Quercus stellata	WDH	High	2.8	1.6	4.4	Lg. inc.	Lg. inc.	High	Rare	Good	Good			2	7
chinkapin oak	Quercus muehlenbergii	NSL	Medium	2.8	1.6	4.4	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	8
cittamwood/gum bumelia	Sideroxylon lanuginosum ssp.	NSL	Low	4	0.5	1.8	Lg. inc.	Lg. inc.	High	Rare	Good	Good	Infill ++	Infill ++	2	9
blackjack oak	Quercus marilandica	NSL	Medium	2.8	0.4	1.0	Lg. inc.	Lg. inc.	High	Rare	Good	Good			2	10
winged elm	Ulmus alata	WDL	Medium	2.8	0.2	0.5	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	11
ashe juniper	Juniperus ashei	NDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			0	12
slash pine	Pinus elliotii	NDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	13
longleaf pine	Pinus palustris	NSH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			0	14
striped maple	Acer pensylvanicum	NSL	Medium	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	15
serviceberry	Amelanchier spp.	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	16
pawpaw	Asimina triloba	NSL	Low	0	0	0	Unknown	Unknown	Medium	Modeled	Unknown	Unknown			0	17
pecan	Carya illinoensis	NSH	Low	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat		Migrate +	3	18
shellbark hickory	Carya laciniosa	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	19
sugarberry	Celtis laevigata	NDH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate ++	Migrate ++	3	20
hackberry	Celtis occidentalis	WDH	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Likely +	Likely +	3	21
black walnut	Juglans nigra	WDH	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Likely +	Likely +	3	22
eastern cottonwood	Populus deltoides	NSH	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Likely +	Likely +	3	23
pin cherry	Prunus pensylvanica	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	24
live oak	Quercus virginiana	NDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate ++	Migrate ++	3	25
black willow	Salix nigra	NSH	Low	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat	Likely +	Likely +	3	26
cedar elm	Ulmus crassifolia	NDH	Medium	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat	Migrate +	Migrate ++	3	27