

	sq. km	sq. mi	FIA Plots
Area of Region	25,768	9,949.1	1

### 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	5	10	Increase	0	0	Very Good	0	0
Hickory	0		Medium	11	17	No Change	2	2	Good	0	0
Maple	0	Abundant	Low	12	2	Decrease	1	1	Fair	0	0
Oak	0	Common	FIA	1		New	25	25	Poor	2	2
Pine	0	Rare				Unknown	1	1	Very Poor	1	1
Other	3	Absent					29	29	FIA Only	1	1
	4	29		29	29				Unknown	0	0
										4	4

### Potential Changes in Climate Variables

#### Temperature (°F)

	Scenario	2009	2039	2069	2099
Annual Average	CCSM45	38.1	38.7	39.6	39.8
	CCSM85	38.1	38.9	39.9	41.1
	GFDL45	38.1	40.2	39.7	40.2
	GFDL85	38.1	39.0	40.2	41.8
	HAD45	38.1	39.1	40.5	41.0
	HAD85	38.1	39.3	41.2	42.7
Growing Season (May—Sep)	CCSM45	45.3	46.0	47.0	47.3
	CCSM85	45.3	46.4	47.3	48.8
	GFDL45	45.3	48.2	47.4	48.2
	GFDL85	45.3	46.5	47.9	50.0
	HAD45	45.3	46.2	47.3	47.9
	HAD85	45.3	46.3	48.0	49.6
Coldest Month (Average)	CCSM45	27.2	27.9	28.3	28.6
	CCSM85	27.2	27.6	28.1	28.9
	GFDL45	27.2	28.3	28.5	28.7
	GFDL85	27.2	28.2	28.7	29.3
	HAD45	27.2	28.1	29.5	29.2
	HAD85	27.2	29.2	30.9	31.5
Warmest Month (Average)	CCSM45	48.1	49.1	49.8	50.0
	CCSM85	48.1	49.5	50.2	51.3
	GFDL45	48.1	49.5	50.0	50.5
	GFDL85	48.1	49.8	50.3	51.7
	HAD45	48.1	49.3	49.9	50.4
	HAD85	48.1	49.5	50.5	51.6

#### Precipitation (in)

	Scenario	2009	2039	2069	2099
Annual Total	CCSM45	8.1	8.3	8.0	7.9
	CCSM85	8.1	7.9	8.3	8.5
	GFDL45	8.1	9.6	10.5	10.1
	GFDL85	8.1	9.3	10.6	10.6
	HAD45	8.1	9.2	8.9	9.3
	HAD85	8.1	8.8	9.1	9.8
Growing Season (May—Sep)	CCSM45	5.2	5.1	4.8	4.6
	CCSM85	5.2	4.7	5.1	4.8
	GFDL45	5.2	6.3	6.9	6.4
	GFDL85	5.2	6.2	6.7	6.5
	HAD45	5.2	5.6	5.2	5.2
	HAD85	5.2	5.1	5.0	4.8

**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>.

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
eastern cottonwood	Populus deltoides	NSH	Low	14.9	16.5	34.2	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			2	1
green ash	Fraxinus pennsylvanica	WSH	Low	9.3	6.2	30.7	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	2	2
peachleaf willow	Salix amygdaloides	NSLX	FIA	9.3	3.5	17.2	Unknown	Unknown	Medium	Rare	FIA Only	FIA Only			0	3
black walnut	Juglans nigra	WDH	Low	5.4	2.9	8.4	No change	No change	Medium	Rare	Poor	Poor		Infill +	2	4
ashe juniper	Juniperus ashei	NDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			0	5
eastern redcedar	Juniperus virginiana	WDH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Likely +	Likely +	3	6
boxelder	Acer negundo	WSH	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat			3	7
sugar maple	Acer saccharum	WDH	High	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat		Migrate +	3	8
black hickory	Carya texana	NDL	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			0	9
sugarberry	Celtis laevigata	NDH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			0	10
hackberry	Celtis occidentalis	WDH	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	11
eastern redbud	Cercis canadensis	NSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	12
white ash	Fraxinus americana	WDL	Medium	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat			0	13
honeylocust	Gleditsia triacanthos	NSH	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat		Migrate +	3	14
Osage-orange	Maclura pomifera	NDH	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat		Migrate +	3	15
red mulberry	Morus rubra	NSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	16
eastern hophornbeam; ironw	Ostrya virginiana	WSL	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Migrate +		3	17
sycamore	Platanus occidentalis	NSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			0	18
bur oak	Quercus macrocarpa	NDH	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Migrate ++	Migrate ++	3	19
blackjack oak	Quercus marilandica	NSL	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat			0	20
chinkapin oak	Quercus muehlenbergii	NSL	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	21
northern red oak	Quercus rubra	WDH	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat			3	22
post oak	Quercus stellata	WDH	High	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat			0	23
live oak	Quercus virginiana	NDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			0	24
black locust	Robinia pseudoacacia	NDH	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	25
black willow	Salix nigra	NSH	Low	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat			3	26
American basswood	Tilia americana	WSL	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +		3	27
American elm	Ulmus americana	WDH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate ++	Migrate ++	3	28
slippery elm	Ulmus rubra	WSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	29