

Current and Potential Future Habitat, Capability, and Migration

	sq. km	sq. mi	FIA Plots
Area of Region	18,127	6,998.7	20

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	7	13	Increase	3	4	Very Good	0	0
Hickory	0			Medium	16	21	No Change	9	8	Good	3	3
Maple	2	Abundant	0	Low	15	5	Decrease	7	7	Fair	4	5
Oak	3	Common	3	FIA	2		New	18	17	Poor	10	9
Pine	1	Rare	18				Unknown	3	4	Very Poor	2	2
Other	14	Absent	18							FIA Only	1	1
	<b>21</b>		<b>39</b>		<b>40</b>	<b>39</b>		<b>40</b>	<b>40</b>	Unknown	1	2
											<b>19</b>	<b>24</b>
											<b>21</b>	<b>22</b>

Potential Changes in Climate Variables

Temperature (°F)

Scenario	2009	2039	2069	2099		
Annual	CCSM45	42.1	43.2	44.6	45.0	
Average	CCSM85	42.1	43.6	45.1	47.0	
	GFDL45	42.1	45.7	44.9	45.7	
	GFDL85	42.1	43.8	45.6	48.3	
	HAD45	42.1	43.8	45.9	46.6	
	HAD85	42.1	44.2	47.1	49.4	
Growing Season	CCSM45	53.6	54.9	56.4	56.9	
	CCSM85	53.6	55.4	56.9	59.3	
May—Sep	GFDL45	53.6	58.5	57.2	58.5	
	GFDL85	53.6	55.8	58.0	61.3	
	HAD45	53.6	55.0	56.7	57.4	
	HAD85	53.6	55.5	58.2	60.4	
Coldest Month	CCSM45	24.4	25.9	26.6	27.3	
	CCSM85	24.4	25.9	26.7	27.9	
Average	GFDL45	24.4	26.5	26.8	27.0	
	GFDL85	24.4	26.1	27.0	28.0	
	HAD45	24.4	26.0	28.1	27.9	
	HAD85	24.4	27.9	30.3	31.6	
Warmest Month	CCSM45	57.7	59.2	60.4	60.8	
	CCSM85	57.7	60.2	61.1	62.8	
Average	GFDL45	57.7	59.9	60.7	61.6	
	GFDL85	57.7	60.4	61.3	63.5	
	HAD45	57.7	59.0	60.2	60.6	
	HAD85	57.7	60.0	61.5	63.0	

Precipitation (in)

Scenario	2009	2039	2069	2099		
Annual	CCSM45	16.7	17.4	16.8	16.7	
Total	CCSM85	16.7	17.2	17.5	17.5	
	GFDL45	16.7	18.9	20.5	20.0	
	GFDL85	16.7	18.9	20.9	20.3	
	HAD45	16.7	19.3	18.5	18.9	
	HAD85	16.7	17.8	18.1	19.7	
Growing Season	CCSM45	10.6	10.5	9.7	9.8	
	CCSM85	10.6	10.0	10.1	9.8	
May—Sep	GFDL45	10.6	12.1	13.0	12.1	
	GFDL85	10.6	12.2	12.9	12.1	
	HAD45	10.6	11.8	11.1	11.2	
	HAD85	10.6	10.8	10.3	10.0	

**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.

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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	15.4	61.4	12.6	Sm. inc.	Sm. inc.	Medium	Common	Good	Good			2	1
eastern cottonwood	Populus deltoides	NSH	Low	12.4	55.3	28.9	No change	No change	Medium	Common	Fair	Fair	Infill +	Infill +	2	2
red mulberry	Morus rubra	NSL	Low	25.2	51.8	16.7	Sm. dec.	Sm. dec.	Medium	Common	Poor	Poor	Infill +	Infill +	2	3
green ash	Fraxinus pennsylvanica	WSH	Low	17.3	40.3	20.2	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	2	4
bur oak	Quercus macrocarpa	NDH	Medium	2	30.6	5.7	No change	No change	High	Rare	Fair	Fair	Infill +	Infill +	2	5
black willow	Salix nigra	NSH	Low	6.2	27.9	8.3	Lg. dec.	Sm. dec.	Low	Rare	Very Poor	Very Poor			2	6
hackberry	Celtis occidentalis	WDH	Medium	12.7	23.6	9.4	Sm. inc.	Sm. inc.	High	Rare	Good	Good			2	7
Siberian elm	Ulmus pumila	NDH	FIA	6.9	17.0	12.5	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	8
American elm	Ulmus americana	WDH	Medium	12.9	12.6	5.0	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			2	9
boxelder	Acer negundo	WSH	Low	12.8	12.3	12.1	Sm. dec.	Sm. dec.	High	Rare	Poor	Poor	Infill +	Infill +	2	10
honeylocust	Gleditsia triacanthos	NSH	Low	3.1	10.0	8.6	No change	No change	High	Rare	Fair	Fair	Infill +	Infill +	2	11
black locust	Robinia pseudoacacia	NDH	Low	1	9.0	7.4	No change	Sm. inc.	Medium	Rare	Poor	Fair	Infill +	Infill +	2	12
black walnut	Juglans nigra	WDH	Low	2.2	8.4	61.2	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	2	13
jack pine	Pinus banksiana	NSH	Medium	1.8	6.2	36.6	Sm. dec.	Sm. dec.	High	Rare	Poor	Poor			0	14
silver maple	Acer saccharinum	NSH	Low	0.6	5.0	2.2	Sm. dec.	Sm. dec.	High	Rare	Poor	Poor	Infill +	Infill +	2	15
slippery elm	Ulmus rubra	WSL	Low	3.3	4.3	2.8	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	2	16
eastern hophornbeam; ironw	Ostrya virginiana	WSL	Low	0.5	2.0	3.5	No change	No change	High	Rare	Fair	Fair	Infill +	Infill +	2	17
northern catalpa	Catalpa speciosa	NSHX	FIA	0.5	1.8	2.9	Unknown	Unknown	Medium	Rare	FIA Only	FIA Only			0	18
northern red oak	Quercus rubra	WDH	Medium	0.5	1.6	2.8	Sm. dec.	Sm. dec.	High	Rare	Poor	Poor	Infill +	Infill +	2	19
American basswood	Tilia americana	WSL	Medium	0.5	0.6	1.1	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	2	20
overcup oak	Quercus lyrata	NSL	Medium	0.1	0.5	0.1	Sm. dec.	Sm. dec.	Low	Rare	Very Poor	Very Poor			0	21
shortleaf pine	Pinus echinata	WDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	22
Virginia pine	Pinus virginiana	NDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	23
red maple	Acer rubrum	WDH	High	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat			3	24
yellow birch	Betula alleghaniensis	NDL	High	0	0	0	Unknown	Unknown	Medium	Modeled	Unknown	Unknown			0	25
bitternut hickory	Carya cordiformis	WSL	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Migrate ++	Migrate ++	3	26
pecan	Carya illinoensis	NSH	Low	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat		Migrate +	3	27
shagbark hickory	Carya ovata	WSL	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate +	3	28
black hickory	Carya texana	NDL	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	29
sugarberry	Celtis laevigata	NDH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	30
eastern redbud	Cercis canadensis	NSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate ++	Migrate ++	3	31
white ash	Fraxinus americana	WDL	Medium	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	32
Osage-orange	Maclura pomifera	NDH	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	33
sycamore	Platanus occidentalis	NSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	34
black cherry	Prunus serotina	WDL	Medium	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat		Migrate +	3	35
scarlet oak	Quercus coccinea	WDL	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	36
blackjack oak	Quercus marilandica	NSL	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat		Migrate ++	3	37
chinkapin oak	Quercus muehlenbergii	NSL	Medium	0	0	0	New Habitat	Unknown	Medium	Absent	New Habitat	Unknown			3	38
post oak	Quercus stellata	WDH	High	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Migrate +	Migrate ++	3	39
black oak	Quercus velutina	WDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate +	3	40