

Area of Region sq. km sq. mi FIA Plots
20,100 7,760.6 313

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	Scenario	Scenario	Scenario	SHIFT	SHIFT			
				High	25	Increase	RCP45	RCP85	Very Good	RCP45	RCP85	RCP45	RCP85	
Ash	3			Medium	42	No Change	9	10	Good	18	18	Likely	2	2
Hickory	5			Low	14	Decrease	29	30	Fair	4	3	Infill	11	12
Maple	6	Abundant	3	FIA	7	New	13	13	Poor	14	15	Migrate	4	7
Oak	10	Common	24			Unknown	13	13	Very Poor	13	12		17	21
Pine	4	Rare	40						FIA Only	2	2			
Other	39	Absent	18						Unknown	6	6			
	67		85				86	86		64	63			

Potential Changes in Climate Variables

Temperature (°F)

	Scenario	2009	2039	2069	2099	
Annual Average	CCSM45	49.6	51.3	54.0	54.0	
	CCSM85	49.6	51.9	54.5	57.7	
	GFDL45	49.6	54.0	55.4	56.4	
	GFDL85	49.6	52.8	56.4	60.7	
	HAD45	49.6	52.6	56.1	57.8	
HAD85	49.6	52.8	57.4	62.4		
Growing Season (May—Sep)	CCSM45	66.2	67.9	70.2	70.7	
	CCSM85	66.2	68.5	71.0	75.0	
	GFDL45	66.2	71.5	73.3	74.7	
	GFDL85	66.2	70.3	74.5	79.4	
	HAD45	66.2	69.7	72.8	75.1	
HAD85	66.2	69.5	75.2	80.6		
Coldest Month Average	CCSM45	23.7	25.4	27.3	27.4	
	CCSM85	23.7	26.4	27.6	29.6	
	GFDL45	23.7	26.8	27.8	28.5	
	GFDL85	23.7	27.1	28.3	29.8	
	HAD45	23.7	24.8	27.9	28.0	
HAD85	23.7	26.2	28.6	31.4		
Warmest Month Average	CCSM45	71.9	73.8	75.2	75.7	
	CCSM85	71.9	74.7	76.2	78.5	
	GFDL45	71.9	75.0	77.1	78.1	
	GFDL85	71.9	76.1	78.3	81.2	
	HAD45	71.9	75.9	78.1	79.6	
HAD85	71.9	76.7	80.7	84.4		

Precipitation (in)

	Scenario	2009	2039	2069	2099	
Annual Total	CCSM45	39.6	40.9	40.9	42.5	
	CCSM85	39.6	41.3	42.1	43.6	
	GFDL45	39.6	43.6	46.4	47.3	
	GFDL85	39.6	41.6	47.0	49.2	
	HAD45	39.6	40.5	41.2	41.0	
HAD85	39.6	41.5	38.4	41.9		
Growing Season (May—Sep)	CCSM45	19.2	19.7	19.3	19.8	
	CCSM85	19.2	18.9	19.4	18.7	
	GFDL45	19.2	21.0	21.6	22.0	
	GFDL85	19.2	19.8	21.3	21.6	
	HAD45	19.2	19.7	17.7	18.5	
HAD85	19.2	19.1	15.7	16.5		

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-DGP30 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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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
red maple	Acer rubrum	WDH	High	82.6	1253.8	18.7	Lg. dec.	Lg. dec.	High	Abundant	Good	Good			1	1
sugar maple	Acer saccharum	WDH	High	63.1	585.3	10.6	No change	Sm. dec.	High	Abundant	Very Good	Good			1	2
black cherry	Prunus serotina	WDL	Medium	79.6	517.3	9.3	Sm. dec.	Sm. dec.	Low	Abundant	Fair	Fair			0	3
white ash	Fraxinus americana	WDL	Medium	63.7	368.2	7.8	No change	No change	Low	Common	Poor	Poor			0	4
American elm	Ulmus americana	WDH	Medium	76.2	366.7	6.5	No change	Sm. inc.	Medium	Common	Fair	Good			1	5
American beech	Fagus grandifolia	WDH	High	47	229.8	6.6	Sm. dec.	Lg. dec.	Medium	Common	Poor	Poor			0	6
northern red oak	Quercus rubra	WDH	Medium	49.4	211.0	5.2	Sm. inc.	No change	High	Common	Very Good	Good			1	7
green ash	Fraxinus pennsylvanica	WSH	Low	49.8	210.7	6.5	Sm. inc.	Sm. inc.	Medium	Common	Good	Good			1	8
pin oak	Quercus palustris	NSH	Low	26.2	206.1	11.3	Sm. dec.	Sm. dec.	Low	Common	Poor	Poor			0	9
yellow-poplar	Liriodendron tulipifera	WDH	High	30.2	202.8	8.3	Sm. inc.	No change	High	Common	Very Good	Good			1	10
black willow	Salix nigra	NSH	Low	9.8	151.6	20.0	Lg. dec.	Sm. dec.	Low	Common	Very Poor	Poor			0	11
shagbark hickory	Carya ovata	WSL	Medium	40.7	143.0	5.3	Sm. inc.	No change	Medium	Common	Good	Fair			1	12
silver maple	Acer saccharinum	NSH	Low	19.7	139.8	10.6	No change	No change	High	Common	Good	Good			1	13
bitternut hickory	Carya cordiformis	WSL	Low	38	114.9	5.0	Sm. inc.	Sm. inc.	High	Common	Very Good	Very Good			1	14
white oak	Quercus alba	WDH	Medium	24.5	114.3	5.3	Lg. inc.	Lg. inc.	High	Common	Very Good	Very Good			1	15
bigtooth aspen	Populus grandidentata	NSL	Medium	21.8	105.7	5.0	Lg. dec.	Lg. dec.	Medium	Common	Poor	Poor			0	16
black locust	Robinia pseudoacacia	NDH	Low	20.4	100.7	6.0	Sm. inc.	Lg. inc.	Medium	Common	Good	Very Good			1	17
black walnut	Juglans nigra	WDH	Low	29.1	91.0	4.6	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good			1	18
sassafras	Sassafras albidum	WSL	Low	21.2	87.4	4.2	Sm. inc.	Sm. inc.	Medium	Common	Good	Good			1	19
American basswood	Tilia americana	WSL	Medium	32.4	87.1	4.1	Sm. dec.	Lg. dec.	Medium	Common	Poor	Poor			0	20
quaking aspen	Populus tremuloides	WDH	High	12.6	66.7	4.3	Lg. dec.	Lg. dec.	Medium	Common	Poor	Poor			0	21
blackgum	Nyssa sylvatica	WDL	Medium	25	65.8	2.8	No change	Sm. inc.	High	Common	Good	Very Good			1	22
swamp white oak	Quercus bicolor	NSL	Low	12.6	64.0	5.9	Lg. dec.	Lg. dec.	Medium	Common	Poor	Poor	Infill +	Infill +	0	23
slippery elm	Ulmus rubra	WSL	Low	27.9	62.8	3.2	Sm. inc.	Lg. inc.	Medium	Common	Good	Very Good			1	24
eastern white pine	Pinus strobus	WDH	High	11.3	62.5	6.1	Lg. dec.	Lg. dec.	Low	Common	Very Poor	Very Poor			0	25
eastern cottonwood	Populus deltoides	NSH	Low	16	60.3	6.9	Sm. dec.	Sm. dec.	Medium	Common	Poor	Poor			0	26
black oak	Quercus velutina	WDH	High	14.4	50.0	3.7	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good	Infill ++	Infill ++	1	27
eastern hophornbeam; ironw	Ostrya virginiana	WSL	Low	24.7	47.7	2.5	Sm. inc.	Sm. inc.	High	Rare	Good	Good			1	28
sycamore	Platanus occidentalis	NSL	Low	15.1	43.6	7.4	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good	Infill ++	Infill ++	1	29
ailanthus	Ailanthus altissima	NSL	FIA	5.4	43.4	8.6	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	30
boxelder	Acer negundo	WSH	Low	11.6	43.4	2.7	Lg. inc.	Lg. inc.	High	Rare	Good	Good			1	31
Norway spruce	Picea abies	NSH	FIA	5.9	39.6	10.1	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	32
black ash	Fraxinus nigra	WSH	Medium	6.9	30.1	5.5	Lg. dec.	Lg. dec.	Low	Rare	Very Poor	Very Poor			0	33
Osage-orange	Maclura pomifera	NDH	Medium	6.1	28.0	11.8	No change	No change	High	Rare	Fair	Fair	Infill +	Infill +	2	34
cucumbertree	Magnolia acuminata	NSL	Low	7.8	22.0	3.0	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	35
gray birch	Betula populifolia	NSL	Low	0.5	21.1	42.5	Very Lg. dec.	Very Lg. dec.	Medium	Rare	Lost	Lost			0	36
American hornbeam; muscle	Carpinus caroliniana	WSL	Low	10.1	20.5	1.4	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	37
Scots pine	Pinus sylvestris	NSH	FIA	6.3	20.1	10.8	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	38
pignut hickory	Carya glabra	WDL	Medium	15.6	18.5	1.9	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good	Infill ++	Infill ++	1	39
bur oak	Quercus macrocarpa	NDH	Medium	7.5	17.4	2.8	Sm. dec.	Sm. dec.	High	Rare	Poor	Poor		Infill +	2	40
mockernut hickory	Carya alba	WDL	Medium	6.7	13.9	3.0	Sm. inc.	Sm. inc.	High	Rare	Good	Good	Infill ++	Infill ++	1	41
eastern hemlock	Tsuga canadensis	NSH	High	3.8	12.9	4.0	Lg. dec.	Lg. dec.	Low	Rare	Very Poor	Very Poor			0	42
scarlet oak	Quercus coccinea	WDL	Medium	6.3	11.7	2.8	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	2	43
serviceberry	Amelanchier spp.	NSL	Low	5.5	11.0	1.8	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	44
flowering dogwood	Cornus florida	WDL	Medium	10.6	10.2	1.4	No change	No change	Medium	Rare	Poor	Poor			1	45
shingle oak	Quercus imbricaria	NDH	Medium	3.1	9.6	3.6	Sm. inc.	No change	Medium	Rare	Fair	Poor	Infill +	Infill +	2	46
honeylocust	Gleditsia triacanthos	NSH	Low	3.9	7.8	4.2	Sm. inc.	Sm. inc.	High	Rare	Good	Good	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
yellow birch	Betula alleghaniensis	NDL	High	3.5	6.5	2.4	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	48
red pine	Pinus resinosa	NSH	Medium	2.5	6.3	8.2	Lg. dec.	Very Lg. dec.	Low	Rare	Very Poor	Lost			0	49
chokecherry	Prunus virginiana	NSLX	FIA	3.5	5.4	4.4	Unknown	Unknown	Medium	Rare	FIA Only	FIA Only			0	50
Virginia pine	Pinus virginiana	NDH	High	2.3	5.1	3.0	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	2	51
pin cherry	Prunus pensylvanica	NSL	Low	0.6	4.6	2.3	Very Lg. dec.	Lg. dec.	Medium	Rare	Lost	Very Poor			0	52
white mulberry	Morus alba	NSL	FIA	0	4.3	0.6	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	53
black maple	Acer nigrum	NSH	Low	3	4.0	1.1	Lg. dec.	Very Lg. dec.	High	Rare	Poor	Lost			0	54
sourwood	Oxydendrum arboreum	NDL	High	0.6	3.9	2.1	Sm. dec.	Lg. dec.	High	Rare	Poor	Poor			0	55
hackberry	Celtis occidentalis	WDH	Medium	7.3	3.2	0.7	Lg. inc.	Lg. inc.	High	Rare	Good	Good	Infill ++	Infill ++	2	56
sweetgum	Liquidambar styraciflua	WDH	High	2.9	2.9	5.2	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			2	57
balsam fir	Abies balsamea	NDH	High	0.5	2.5	5.1	Lg. dec.	Lg. dec.	Low	Rare	Very Poor	Very Poor			0	58
shellbark hickory	Carya laciniosa	NSL	Low	0.8	2.2	1.6	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	59
chinkapin oak	Quercus muehlenbergii	NSL	Medium	0.4	1.5	2.5	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			2	60
Ohio buckeye	Aesculus glabra	NSL	Low	7.4	1.3	1.9	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	61
swamp chestnut oak	Quercus michauxii	NSL	Low	0.4	0.8	1.4	Sm. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	62
sweet birch	Betula lenta	NDH	High	4.5	0.7	0.9	Very Lg. dec.	Very Lg. dec.	Low	Rare	Lost	Lost			0	63
pawpaw	Asimina triloba	NSL	Low	0.5	0.6	1.3	Very Lg. dec.	Very Lg. dec.	Medium	Rare	Lost	Lost			0	64
butternut	Juglans cinerea	NSLX	FIA	0.2	0.6	0.6	Unknown	Unknown	Low	Rare	FIA Only	FIA Only			0	65
red mulberry	Morus rubra	NSL	Low	2	0.1	0.8	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			2	66
Norway maple	Acer platanoides	NSL	FIA	2	0.1	0.6	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	67
eastern redcedar	Juniperus virginiana	WDH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate ++	Migrate ++	3	68
jack pine	Pinus banksiana	NSH	Medium	0	0	0	Unknown	Unknown	High	Absent	Unknown	Unknown			0	69
shortleaf pine	Pinus echinata	WDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	70
striped maple	Acer pensylvanicum	NSL	Medium	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	71
mountain maple	Acer spicatum	NSL	Low	0	0	0	Unknown	Unknown	High	Absent	Unknown	Unknown			0	72
yellow buckeye	Aesculus flava	NSL	Low	0	0	0	Unknown	Unknown	Low	Modeled	Unknown	Unknown			0	73
pecan	Carya illinoensis	NSH	Low	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat			3	74
black hickory	Carya texana	NDL	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			0	75
sugarberry	Celtis laevigata	NDH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	76
eastern redbud	Cercis canadensis	NSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Likely +	Likely +	3	77
common persimmon	Diospyros virginiana	NSL	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	78
blue ash	Fraxinus quadrangulata	NSL	Low	0	0	0	Unknown	Unknown	Low	Absent	Unknown	Unknown			0	79
southern red oak	Quercus falcata	WDL	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat		Migrate +	3	80
blackjack oak	Quercus marilandica	NSL	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat			3	81
chestnut oak	Quercus prinus	NDH	High	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Likely +	Likely +	3	82
Shumard oak	Quercus shumardii	NSL	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat		Migrate +	3	83
post oak	Quercus stellata	WDH	High	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Migrate ++	Migrate ++	3	84
bluejack oak	Quercus incana	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	85
winged elm	Ulmus alata	WDL	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate ++	3	86