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	sq. km	sq. mi	FIA Plots
Area of Region	9,412.7	3,634.3	37

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
Ash	2
Hickory	4
Maple	4
Oak	8
Pine	0
Other	31
	49

Abundance	
Abundant	0
Common	8
Rare	41
Absent	10
	59

	Model Reliability	Adaptability
High	9	19
Medium	23	34
Low	25	6
FIA	3	
	60	**59**

Potential Change in Habitat Suitability	Scenario RCP45	Scenario RCP85
Increase	10	13
No Change	16	11
Decrease	20	22
New	8	8
Unknown	6	6
	60	**60**

Capability to Cope or Persist	Scenario RCP45	Scenario RCP85
Very Good	0	0
Good	8	10
Fair	13	11
Poor	10	12
Very Poor	14	12
FIA Only	2	2
Unknown	3	3
	50	**50**

Migration Potential	SHIFT RCP45	SHIFT RCP85
Likely	0	0
Infill	26	23
Migrate	4	7
	30	**30**

Potential Changes in Climate Variables

Temperature (°F)

	Scenario	2009	2039	2069	2099
Annual Average	CCSM45	51.1	53.0	55.3	55.6
	CCSM85	51.1	53.7	56.2	59.1
	GFDL45	51.1	57.2	56.6	57.5
	GFDL85	51.1	54.2	57.6	61.7
	HAD45	51.1	54.0	57.5	59.2
	HAD85	51.1	54.3	59.0	63.7
Growing Season May—Sep	CCSM45	69.0	71.0	73.0	73.8
	CCSM85	69.0	71.8	74.3	77.7
	GFDL45	69.0	76.5	75.4	76.9
	GFDL85	69.0	72.6	76.7	81.7
	HAD45	69.0	72.2	75.2	77.3
	HAD85	69.0	72.3	78.1	82.7
Coldest Month Average	CCSM45	22.3	23.5	25.5	25.7
	CCSM85	22.3	25.0	26.5	27.9
	GFDL45	22.3	26.5	27.2	27.8
	GFDL85	22.3	26.0	27.3	28.5
	HAD45	22.3	23.8	27.2	27.2
	HAD85	22.3	25.8	28.6	31.0
Warmest Month Average	CCSM45	74.5	76.5	77.9	78.7
	CCSM85	74.5	78.0	79.8	81.5
	GFDL45	74.5	77.6	79.3	80.4
	GFDL85	74.5	78.4	80.4	83.4
	HAD45	74.5	78.0	80.4	81.3
	HAD85	74.5	79.4	83.1	86.1

Precipitation (in)

	Scenario	2009	2039	2069	2099
Annual Total	CCSM45	38.7	37.7	38.5	37.8
	CCSM85	38.7	38.7	38.2	39.4
	GFDL45	38.7	42.0	45.9	46.9
	GFDL85	38.7	42.0	47.6	49.0
	HAD45	38.7	40.1	42.3	42.0
	HAD85	38.7	41.7	39.7	43.0
Growing Season May—Sep	CCSM45	19.4	19.3	18.9	17.5
	CCSM85	19.4	18.2	17.8	17.5
	GFDL45	19.4	20.6	21.7	22.3
	GFDL85	19.4	20.9	22.2	21.8
	HAD45	19.4	19.6	18.3	19.2
	HAD85	19.4	19.4	16.4	16.7

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.

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Common Name	Scientific Name	Range	MR	%Cell	FIAsum	FIAiv	ChngCl45	ChngCl85	Adap	Abund	Capabil45	Capabil85	SHIFT45	SHIFT85	SSO	N
sugar maple	Acer saccharum	WDH	High	31.2	223.6	13.6	Lg. dec.	Lg. dec.	High	Common	Fair	Fair	Infill +	Infill +	2	1
black walnut	Juglans nigra	WDH	Low	46	101.9	7.5	No change	Sm. dec.	Medium	Common	Fair	Poor	Infill +	Infill +	2	2
silver maple	Acer saccharinum	NSH	Low	26.4	82.4	24.7	No change	No change	High	Common	Good	Good	Infill ++	Infill ++	2	3
black cherry	Prunus serotina	WDL	Medium	40.5	73.9	11.4	No change	Sm. dec.	Low	Common	Poor	Poor	Infill +	Infill +	2	4
bitternut hickory	Carya cordiformis	WSL	Low	9.6	68.3	9.0	Sm. dec.	Sm. dec.	High	Common	Fair	Fair	Infill +	Infill +	2	5
American elm	Ulmus americana	WDH	Medium	32.3	66.7	5.2	Sm. inc.	Sm. inc.	Medium	Common	Good	Good	Infill ++	Infill ++	2	6
sycamore	Platanus occidentalis	NSL	Low	14.2	57.2	10.5	No change	No change	Medium	Common	Fair	Fair	Infill +	Infill +	2	7
American basswood	Tilia americana	WSL	Medium	17.1	51.3	5.2	Lg. dec.	Lg. dec.	Medium	Common	Poor	Poor	Infill +		2	8
northern red oak	Quercus rubra	WDH	Medium	28.5	47.6	5.7	Sm. dec.	Sm. dec.	High	Rare	Poor	Poor	Infill +	Infill +	2	9
Osage-orange	Maclura pomifera	NDH	Medium	9.9	41.2	13.9	No change	No change	High	Rare	Fair	Fair	Infill +	Infill +	2	10
slippery elm	Ulmus rubra	WSL	Low	22.2	40.8	4.0	Sm. dec.	No change	Medium	Rare	Very Poor	Poor		Infill +	2	11
sassafras	Sassafras albidum	WSL	Low	29	39.5	3.2	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			2	12
hackberry	Celtis occidentalis	WDH	Medium	16.9	38.9	5.8	Lg. inc.	Sm. inc.	High	Rare	Good	Good	Infill ++	Infill ++	2	13
white oak	Quercus alba	WDH	Medium	32.6	38.5	5.7	No change	Sm. dec.	High	Rare	Fair	Poor	Infill +	Infill +	2	14
yellow-poplar	Liriodendron tulipifera	WDH	High	6.9	37.0	8.0	No change	Sm. dec.	High	Rare	Fair	Poor	Infill +		2	15
green ash	Fraxinus pennsylvanica	WSH	Low	20.6	33.3	12.3	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good	Infill ++	Infill ++	2	16
black oak	Quercus velutina	WDH	High	25.8	31.3	7.9	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	2	17
white ash	Fraxinus americana	WDL	Medium	22.8	25.6	5.6	Lg. inc.	Lg. inc.	Low	Rare	Fair	Fair	Infill +	Infill +	2	18
red mulberry	Morus rubra	NSL	Low	16.2	21.4	2.7	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	19
eastern redbud	Cercis canadensis	NSL	Low	5	21.1	3.2	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			2	20
honeylocust	Gleditsia triacanthos	NSH	Low	25.6	20.5	8.3	Sm. inc.	Sm. inc.	High	Rare	Good	Good	Infill ++	Infill ++	2	21
shagbark hickory	Carya ovata	WSL	Medium	12.9	19.8	5.2	Sm. inc.	Sm. inc.	Medium	Rare	Fair	Fair	Infill +	Infill +	2	22
bur oak	Quercus macrocarpa	NDH	Medium	10.7	17.9	8.9	No change	Sm. inc.	High	Rare	Fair	Good	Infill +		2	23
Ohio buckeye	Aesculus glabra	NSL	Low	8.4	16.9	3.8	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	24
shingle oak	Quercus imbricaria	NDH	Medium	19.5	13.3	6.5	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			2	25
pignut hickory	Carya glabra	WDL	Medium	15.8	12.1	3.6	No change	Sm. dec.	Medium	Rare	Poor	Very Poor	Infill +		2	26
eastern cottonwood	Populus deltoides	NSH	Low	16.4	11.2	7.5	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good	Infill ++	Infill ++	2	27
eastern redcedar	Juniperus virginiana	WDH	Medium	7.7	9.4	14.7	Sm. inc.	Lg. inc.	Medium	Rare	Fair	Good	Infill +		2	28
pin oak	Quercus palustris	NSH	Low	6.5	8.6	5.1	No change	No change	Low	Rare	Very Poor	Very Poor			2	29
chinkapin oak	Quercus muehlenbergii	NSL	Medium	8.2	8.6	5.3	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	2	30
black locust	Robinia pseudoacacia	NDH	Low	9.4	5.3	4.8	No change	Sm. inc.	Medium	Rare	Poor	Fair	Infill +	Infill +	2	31
eastern hophornbeam; ironw	Ostrya virginiana	WSL	Low	5.8	5.0	1.6	Sm. dec.	No change	High	Rare	Poor	Fair	Infill +		2	32
red maple	Acer rubrum	WDH	High	10.2	4.8	5.3	No change	No change	High	Rare	Fair	Fair		Infill +	2	33
American beech	Fagus grandifolia	WDH	High	2.3	4.6	1.0	Sm. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	34
northern catalpa	Catalpa speciosa	NSHX	FIA	1.1	4.3	4.0	Unknown	Unknown	Medium	Rare	FIA Only	FIA Only			0	35
mockernut hickory	Carya alba	WDL	Medium	6.1	4.1	2.2	No change	No change	High	Rare	Fair	Fair	Infill +	Infill +	2	36
river birch	Betula nigra	NSL	Low	3.5	3.9	12.1	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	37
pawpaw	Asimina triloba	NSL	Low	7.4	2.7	1.0	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	38
flowering dogwood	Cornus florida	WDL	Medium	3.3	2.3	0.6	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	39
blackgum	Nyssa sylvatica	WDL	Medium	6.7	1.9	1.3	Lg. dec.	Lg. dec.	High	Rare	Poor	Poor			0	40
bigtooth aspen	Populus grandidentata	NSL	Medium	0.5	1.8	0.8	Very Lg. dec.	Very Lg. dec.	Medium	Rare	Lost	Lost			0	41
boxelder	Acer negundo	WSH	Low	7.8	1.7	0.9	Lg. inc.	Lg. inc.	High	Rare	Good	Good			2	42
black willow	Salix nigra	NSH	Low	3.5	1.2	3.6	No change	Lg. inc.	Low	Rare	Very Poor	Fair		Infill +	2	43
northern pin oak	Quercus ellipsoidalis	NSH	Medium	3.2	1.0	2.8	Lg. dec.	Lg. dec.	High	Rare	Poor	Poor			0	44
American hornbeam; muscle	Carpinus caroliniana	WSL	Low	1.7	1.0	1.4	Sm. dec.	No change	Medium	Rare	Very Poor	Poor			0	45
quaking aspen	Populus tremuloides	WDH	High	3.5	0.7	2.1	Sm. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	46
sweetgum	Liquidambar styraciflua	WDH	High	4.2	0.6	2.2	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			0	47

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Common Name	Scientific Name	Range	MR	%Cell	FIAsum	FIAiv	ChngCl45	ChngCl85	Adap	Abund	Capabil45	Capabil85	SHIFT45	SHIFT85	SSO	N
Kentucky coffeetree	Gymnocladus dioicus	NSLX	FIA	2	0.3	0.5	Unknown	Unknown	Medium	Rare	FIA Only	FIA Only			0	48
white mulberry	Morus alba	NSL	FIA	3.2	0.2	0.7	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	49
serviceberry	Amelanchier spp.	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	50
pecan	Carya illinoinensis	NSH	Low	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat	Migrate +	Migrate ++	3	51
black hickory	Carya texana	NDL	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate +	3	52
sugarberry	Celtis laevigata	NDH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate ++	3	53
common persimmon	Diospyros virginiana	NSL	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Migrate ++	Migrate ++	3	54
black ash	Fraxinus nigra	WSH	Medium	0	0	0	Unknown	Unknown	Low	Modeled	Unknown	Unknown			0	55
bigleaf magnolia	Magnolia macrophylla	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	56
swamp white oak	Quercus bicolor	NSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +		3	57
blackjack oak	Quercus marilandica	NSL	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat		Migrate ++	3	58
post oak	Quercus stellata	WDH	High	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Migrate ++	Migrate ++	3	59
winged elm	Ulmus alata	WDL	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate ++	3	60