S42 E84

	sq. km	sq. mi	FIA Plots
Area of Region	9,130.7	3,525.4	100

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						Potential Change in Habitat Suitability			Capability to Cope or Persist			Migration Potential	
					Model			Scenario	Scenario			Scenario	Scenario		SHIFT	SHIFT
Ash	3			Abundance	Reliability	Adaptability		RCP45	RCP85			RCP45	RCP85		RCP45	RCP85
Hickory	4															
Maple	4	Abundant	4	High	12	20	Increase	16	14	Very Good	6	6	Likely	3	3
Oak	8	Common	24	Medium	23	31	No Change	10	9	Good	13	10	Infill	11	10
Pine	3	Rare	19	Low	22	8	Decrease	17	20	Fair	4	6	Migrate	2	7
Other	25	Absent	14	FIA	4		New	13	13	Poor	9	8		16	20
	47		61		61	59	Unknown	5	5	Very Good	9	10			
								61	61	FIA Only	2	2			
										Unknown	1	1			
											44	43			

Potential Changes in Climate Variables

Temperature (°F)

	Scenario	2009	2039	2069	2099	
Annual	CCSM45	47.8	49.7	52.6	52.6	
Average	CCSM85	47.8	50.4	53.2	56.4	
	GFDL45	47.8	51.8	53.5	54.5	
	GFDL85	47.8	51.0	54.5	59.0	
	HAD45	47.8	51.1	54.5	56.3	
	HAD85	47.8	51.3	55.8	61.1	
Growing	CCSM45	65.4	67.2	69.7	70.0	
Season	CCSM85	65.4	68.0	70.4	74.4	
May—Sep	GFDL45	65.4	70.1	72.3	73.8	
	GFDL85	65.4	69.3	73.5	78.6	
	HAD45	65.4	69.0	71.4	73.8	
	HAD85	65.4	68.5	73.6	79.0	
Coldest	CCSM45	20.9	22.5	25.2	25.1	
Month	CCSM85	20.9	23.5	25.5	27.5	
Average	GFDL45	20.9	23.8	25.1	25.5	
	GFDL85	20.9	24.4	25.7	27.5	
	HAD45	20.9	22.7	26.5	26.4	
	HAD85	20.9	24.8	27.7	31.2	
Warmest	CCSM45	71.3	73.7	75.2	75.6	
Month	CCSM85	71.3	74.8	76.5	78.6	
Average	GFDL45	71.3	74.5	76.3	77.3	
	GFDL85	71.3	75.4	77.5	80.6	
	HAD45	71.3	75.5	77.1	78.7	
	HAD85	71.3	75.9	79.3	83.1	

Precipitation (in)

	Scenario	2009	2039	2069	2099	
Annual	CCSM45	33.8	33.2	32.6	33.8	
Total	CCSM85	33.8	33.8	33.7	34.4	
	GFDL45	33.8	36.5	40.3	40.4	
	GFDL85	33.8	36.8	41.0	42.5	
	HAD45	33.8	34.3	36.6	36.0	
	HAD85	33.8	36.2	33.9	37.0	
Growing	CCSM45	17.2	17.1	16.5	16.7	
Season	CCSM85	17.2	16.7	16.8	16.0	
May—Sep	GFDL45	17.2	18.1	19.7	20.1	
	GFDL85	17.2	18.7	19.4	19.8	
	HAD45	17.2	16.6	15.8	16.4	
	HAD85	17.2	16.9	13.6	14.8	

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.

One x One Degree
Climate Change Atlas Tree Species
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
black cherry	Prunus serotina	WDL	Medium	63.1	955.0	18.9	Sm. dec.	Lg. dec.	Low	Abundant	Fair	Poor			0	1
American elm	Ulmus americana	WDH	Medium	64.4	688.4	12.8	No change	No change	Medium	Abundant	Good	Good			1	2
red maple	Acer rubrum	WDH	High	38	618.5	14.4	Sm. dec.	Sm. dec.	High	Abundant	Good	Good			1	3
green ash	Fraxinus pennsylvanica	WSH	Low	45.2	514.0	12.2	No change	No change	Medium	Abundant	Good	Good			1	4
silver maple	Acer saccharinum	NSH	Low	22.2	307.4	16.5	Sm. inc.	Sm. inc.	High	Common	Very Good	Very Good			1	5
black oak	Quercus velutina	WDH	High	24.7	271.3	10.4	Sm. inc.	Sm. inc.	Medium	Common	Good	Good			1	6
eastern cottonwood	Populus deltoides	NSH	Low	18.4	223.6	17.1	Sm. inc.	Sm. inc.	Medium	Common	Good	Good			1	7
northern red oak	Quercus rubra	WDH	Medium	25.7	205.3	7.6	Sm. inc.	No change	High	Common	Very Good	Good			1	8
sugar maple	Acer saccharum	WDH	High	24.8	195.2	8.8	Sm. inc.	Sm. inc.	High	Common	Very Good	Very Good			1	9
white oak	Quercus alba	WDH	Medium	23.3	183.7	8.5	Lg. inc.	Sm. inc.	High	Common	Very Good	Very Good			1	10
black walnut	Juglans nigra	WDH	Low	34.7	174.8	7.8	Sm. inc.	Sm. inc.	Medium	Common	Good	Good			1	11
sassafras	Sassafras albidum	WSL	Low	12.4	134.1	9.8	Sm. inc.	Sm. dec.	Medium	Common	Good	Poor			1	12
American basswood	Tilia americana	WSL	Medium	31.2	106.9	4.5	Sm. inc.	Sm. inc.	Medium	Common	Good	Good			1	13
swamp white oak	Quercus bicolor	NSL	Low	15.3	103.2	8.8	No change	No change	Medium	Common	Fair	Fair	Infill +	Infill +	1	14
bitternut hickory	Carya cordiformis	WSL	Low	15.4	93.1	9.4	No change	Sm. inc.	High	Common	Good	Very Good			1	15
northern pin oak	Quercus ellipsoidalis	NSH	Medium	2	91.5	35.7	Very Lg. dec.	Very Lg. dec.	High	Common	Lost	Lost			0	16
white ash	Fraxinus americana	WDL	Medium	32	89.3	7.2	Lg. inc.	Lg. inc.	Low	Common	Good	Good			1	17
pignut hickory	Carya glabra	WDL	Medium	13.3	86.7	7.3	Sm. inc.	No change	Medium	Common	Good	Fair	Infill ++	Infill +	1	18
bigtooth aspen	Populus grandidentata	NSL	Medium	11.8	81.9	10.2	Lg. dec.	Lg. dec.	Medium	Common	Poor	Poor			0	19
red pine	Pinus resinosa	NSH	Medium	7.4	75.9	16.0	Lg. dec.	Lg. dec.	Low	Common	Very Poor	Very Poor			0	20
shagbark hickory	Carya ovata	WSL	Medium	24.9	70.8	3.2	Sm. inc.	No change	Medium	Common	Good	Fair			1	21
boxelder	Acer negundo	WSH	Low	13.1	68.5	4.7	Lg. inc.	Lg. inc.	High	Common	Very Good	Very Good			1	22
eastern white pine	Pinus strobus	WDH	High	2.2	67.7	30.9	No change	Lg. dec.	Low	Common	Poor	Very Poor	Infill +		2	23
white mulberry	Morus alba	NSL	FIA	8.6	65.8	5.8	Unknown	Unknown	NA	Common	NNIS	NNIS			0	24
slippery elm	Ulmus rubra	WSL	Low	8.9	62.4	8.6	Sm. dec.	Sm. dec.	Medium	Common	Poor	Poor	Infill +	Infill +	0	25
quaking aspen	Populus tremuloides	WDH	High	12	61.7	7.1	Lg. dec.	Lg. dec.	Medium	Common	Poor	Poor	Infill +	Infill +	0	26
American beech	Fagus grandifolia	WDH	High	15.6	54.8	4.7	Sm. dec.	Lg. dec.	Medium	Common	Poor	Poor	Infill +		0	27
bur oak	Quercus macrocarpa	NDH	Medium	12.6	50.6	8.4	Lg. inc.	Lg. inc.	High	Common	Very Good	Very Good	Infill ++	Infill ++	1	28
tamarack (native)	Larix laricina	NSH	High	2.2	44.7	20.4	Sm. dec.	Sm. dec.	Low	Rare	Very Poor	Very Poor			2	29
Scots pine	Pinus sylvestris	NSH	FIA	5.2	41.4	16.8	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	30
black locust	Robinia pseudoacacia	NDH	Low	3.4	37.7	7.8	No change	Sm. inc.	Medium	Rare	Poor	Fair	Infill +	Infill +	1	31
red mulberry	Morus rubra	NSL	Low	3.6	21.5	6.7	No change	Sm. dec.	Medium	Rare	Poor	Very Poor			0	32
eastern hophornbeam; ironw	Ostrya virginiana	WSL	Low	11	19.5	1.9	No change	Lg. dec.	High	Rare	Fair	Poor	Infill +	Infill +	1	33
white spruce	Picea glauca	NSL	Medium	1.1	17.5	16.0	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	34
black willow	Salix nigra	NSH	Low	8.1	16.5	3.3	No change	No change	Low	Rare	Very Poor	Very Poor			0	35
American hornbeam; muscle	Carpinus caroliniana	WSL	Low	9.8	14.8	1.4	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	36
mockernut hickory	Carya alba	WDL	Medium	2	14.5	5.8	Lg. dec.	No change	High	Rare	Poor	Fair		Infill +	2	37
black ash	Fraxinus nigra	WSH	Medium	1.7	11.4	3.6	Sm. dec.	Sm. dec.	Low	Rare	Very Poor	Very Poor			0	38
eastern redcedar	Juniperus virginiana	WDH	Medium	2	10.9	4.5	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good	Infill ++	Infill ++	2	39
serviceberry	Amelanchier spp.	NSL	Low	6.5	7.0	2.2	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	40
shingle oak	Quercus imbricaria	NDH	Medium	0.5	5.0	2.1	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	41
peachleaf willow	Salix amygdaloides	NSLX	FIA	1.1	4.5	4.1	Unknown	Unknown	Medium	Rare	FIA Only	FIA Only			0	42
chokecherry	Prunus virginiana	NSLX	FIA	5.5	4.0	2.1	Unknown	Unknown	Medium	Rare	FIA Only	FIA Only			0	43
flowering dogwood	Cornus florida	WDL	Medium	0.4	3.2	1.0	Lg. dec.	Very Lg. dec.	Medium	Rare	Very Poor	Lost			0	44
pin oak	Quercus palustris	NSH	Low	0.6	2.9	1.3	Lg. inc.	Lg. inc.	Low	Rare	Fair	Fair	Infill +	Infill +	2	45
paper birch	Betula papyrifera	WDH	High	1.1	2.0	1.8	Very Lg. dec.	Very Lg. dec.	Medium	Rare	Lost	Lost			0	46
yellow birch	Betula alleghaniensis	NDL	High	1.4	0.5	0.6	No change	No change	Medium	Rare	Poor	Poor			0	47

One x One Degree
Climate Change Atlas Tree Species
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
black hickory	Carya texana	NDL	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	48
hackberry	Celtis occidentalis	WDH	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Likely +	Likely +	3	49
eastern redbud	Cercis canadensis	NSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	50
common persimmon	Diospyros virginiana	NSL	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat		Migrate +	3	51
honeylocust	Gleditsia triacanthos	NSH	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat			3	52
yellow-poplar	Liriodendron tulipifera	WDH	High	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Likely +	Likely +	3	53
Osage-orange	Maclura pomifera	NDH	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat		Migrate +	3	54
bigleaf magnolia	Magnolia macrophylla	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	55
blackgum	Nyssa sylvatica	WDL	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat		Migrate +	3	56
sycamore	Platanus occidentalis	NSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	57
blackjack oak	Quercus marilandica	NSL	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat			3	58
Shumard oak	Quercus shumardii	NSL	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Likely +	Likely +	3	59
post oak	Quercus stellata	WDH	High	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat		Migrate ++	3	60
winged elm	Ulmus alata	WDL	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate +	3	61