

Current and Potential Future Habitat, Capability, and Migration

	sq. km	sq. mi	FIA Plots
Area of Region	23,068	8,906.7	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				Increase	0	1	Very Good	0	0
Hickory	0				No Change	1	1	Good	0	0
Maple	1	Abundant	High	7	Decrease	2	1	Fair	0	1
Oak	0	Common	Medium	9	11	New	13	Poor	2	2
Pine	0	Rare	Low	6	2	Unknown	5	Very Poor	1	0
Other	2	Absent	FIA	1				FIA Only	0	0
	4	20		21	20		21	Unknown	4	4

Potential Changes in Climate Variables

Temperature (°F)

	Scenario	2009	2039	2069	2099
Annual Average	CCSM45	42.3	44.0	46.6	47.2
	CCSM85	42.3	44.7	47.9	51.3
	GFDL45	42.3	48.3	46.8	48.3
	GFDL85	42.3	44.9	48.2	52.9
	HAD45	42.3	45.6	49.5	51.3
	HAD85	42.3	46.1	51.2	56.2
Growing Season (May—Sep)	CCSM45	63.4	65.6	68.1	68.8
	CCSM85	63.4	66.4	69.4	73.6
	GFDL45	63.4	71.1	69.2	71.1
	GFDL85	63.4	66.8	70.4	76.2
	HAD45	63.4	66.5	69.4	71.5
	HAD85	63.4	66.3	70.6	75.9
Coldest Month (Average)	CCSM45	9.4	10.8	12.9	13.0
	CCSM85	9.4	10.1	12.2	14.6
	GFDL45	9.4	12.6	13.6	14.1
	GFDL85	9.4	12.7	14.3	16.8
	HAD45	9.4	12.5	16.3	15.7
	HAD85	9.4	15.4	20.6	22.6
Warmest Month (Average)	CCSM45	70.9	73.9	75.3	76.1
	CCSM85	70.9	74.8	76.9	79.6
	GFDL45	70.9	74.7	76.2	77.4
	GFDL85	70.9	75.0	76.9	80.6
	HAD45	70.9	74.7	76.1	77.8
	HAD85	70.9	74.3	76.9	80.5

Precipitation (in)

	Scenario	2009	2039	2069	2099
Annual Total	CCSM45	19.2	19.4	19.5	18.6
	CCSM85	19.2	19.2	19.1	19.5
	GFDL45	19.2	22.3	24.4	22.9
	GFDL85	19.2	22.4	25.0	24.3
	HAD45	19.2	20.4	19.9	20.3
	HAD85	19.2	20.7	20.5	22.3
Growing Season (May—Sep)	CCSM45	13.4	12.6	12.6	12.0
	CCSM85	13.4	12.4	12.6	11.7
	GFDL45	13.4	15.6	16.9	15.4
	GFDL85	13.4	15.1	16.7	15.6
	HAD45	13.4	13.1	12.3	12.1
	HAD85	13.4	13.3	12.3	11.6

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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Section 331E

EcoMap 2007

Climate Change Atlas Tree Species

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Common Name	Scientific Name	Range	MR	%Cell	FIAsum	FIAiv	ChngCl45	ChngCl85	Adap	Abund	Capabil45	Capabil85	SHIFT45	SHIFT85	SSO	N
Siberian elm	Ulmus pumila	NDH	FIA	1.9	13.4	23.8	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	1
boxelder	Acer negundo	WDH	Low	0.2	7.0	8.4	Sm. dec.	Lg. dec.	High	Rare	Poor	Poor			0	2
eastern cottonwood	Populus deltoides	NSH	Low	0.2	3.8	4.5	Sm. dec.	No change	Medium	Rare	Very Poor	Poor			2	3
green ash	Fraxinus pennsylvanica	WSH	Low	1.9	2.7	4.3	No change	Sm. inc.	Medium	Rare	Poor	Fair			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	Migrate ++	Migrate ++	3	6
red pine	Pinus resinosa	NSH	Medium	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat			3	7
striped maple	Acer pensylvanicum	NSL	Medium	0	0	0	Unknown	Unknown	Medium	Modeled	Unknown	Unknown			0	8
mountain maple	Acer spicatum	NSL	Low	0	0	0	Unknown	Unknown	High	Absent	Unknown	Unknown			0	9
yellow buckeye	Aesculus flava	NSL	Low	0	0	0	Unknown	Unknown	Low	Absent	Unknown	Unknown			0	10
black hickory	Carya texana	NDL	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			0	11
hackberry	Celtis occidentalis	WDH	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat			3	12
flowering dogwood	Cornus florida	WDL	Medium	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	13
honeylocust	Gleditsia triacanthos	NSH	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat			3	14
quaking aspen	Populus tremuloides	WDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	15
northern pin oak	Quercus ellipsoidalis	NSH	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat			3	16
bur oak	Quercus macrocarpa	NDH	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Migrate ++	Migrate ++	3	17
post oak	Quercus stellata	WDH	High	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat			0	18
live oak	Quercus virginiana	NDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			0	19
American basswood	Tilia americana	WSL	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate +	3	20
American elm	Ulmus americana	WDH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate +	3	21