

One x One Degree
Climate Change Atlas Tree Species
 Current and Potential Future Habitat, Capability, and Migration

Area of Region sq. km sq. mi FIA Plots
 10,748 4,149.7 99

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	6	11	Increase	1	1	Very Good	0	0
Hickory	3			Medium	14	18	No Change	8	8	Good	1	1
Maple	1	Abundant	1	Low	10	2	Decrease	13	13	Fair	8	8
Oak	5	Common	10	FIA	1		New	2	2	Poor	11	11
Pine	1	Rare	12				Unknown	7	7	Very Poor	2	2
Other	12	Absent	7							FIA Only	1	1
	23		30		31	31		31	31	Unknown	6	6
											29	29

Potential Changes in Climate Variables

Temperature (°F)

	Scenario	2009	2039	2069	2099
Annual Average	CCSM45	68.9	70.4	71.6	72.1
	CCSM85	68.9	70.6	72.8	75.1
	GFDL45	68.9	73.9	73.1	74.6
	GFDL85	68.9	71.5	74.7	78.1
	HAD45	68.9	70.9	73.3	74.3
	HAD85	68.9	71.3	74.4	77.6
Growing Season May—Sep	CCSM45	80.9	82.3	83.1	83.8
	CCSM85	80.9	82.6	84.5	87.1
	GFDL45	80.9	87.1	85.8	88.0
	GFDL85	80.9	84.3	87.8	91.9
	HAD45	80.9	83.0	84.9	85.7
	HAD85	80.9	83.4	86.7	89.5
Coldest Month Average	CCSM45	50.0	52.3	52.9	53.2
	CCSM85	50.0	52.1	53.2	54.4
	GFDL45	50.0	53.6	53.5	53.7
	GFDL85	50.0	51.0	52.1	52.7
	HAD45	50.0	50.6	52.1	52.8
	HAD85	50.0	53.0	54.4	56.0
Warmest Month Average	CCSM45	84.9	85.9	86.5	86.8
	CCSM85	84.9	86.5	87.2	88.4
	GFDL45	84.9	88.9	89.5	90.6
	GFDL85	84.9	89.2	90.7	93.3
	HAD45	84.9	87.1	88.0	88.5
	HAD85	84.9	87.6	89.3	90.3

Precipitation (in)

	Scenario	2009	2039	2069	2099
Annual Total	CCSM45	35.0	36.1	40.1	36.0
	CCSM85	35.0	36.9	38.6	37.3
	GFDL45	35.0	34.5	40.8	31.8
	GFDL85	35.0	34.1	35.3	33.6
	HAD45	35.0	36.6	35.3	35.7
	HAD85	35.0	36.7	32.9	34.6
Growing Season May—Sep	CCSM45	16.1	17.4	18.6	16.8
	CCSM85	16.1	17.2	17.2	15.7
	GFDL45	16.1	16.2	21.2	15.2
	GFDL85	16.1	16.7	17.3	16.6
	HAD45	16.1	16.1	15.8	16.7
	HAD85	16.1	16.8	14.9	15.4

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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USDA Forest Service
Northern Research Station
Landscape Change Research Group
Iverson, Peters, Prasad, Matthews

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Common Name	Scientific Name	Range	MR	%Cell	FIAsum	FIAiv	ChngCl45	ChngCl85	Adap	Abund	Capabil45	Capabil85	SHIFT45	SHIFT85	SSO	N
post oak	Quercus stellata	WDH	High	68.9	811.4	28.3	Sm. dec.	Sm. dec.	High	Abundant	Good	Good			1	1
cedar elm	Ulmus crassifolia	NDH	Medium	53	367.2	19.5	Sm. dec.	Sm. dec.	Low	Common	Poor	Poor			0	2
live oak	Quercus virginiana	NDH	High	42	276.4	22.2	No change	No change	Medium	Common	Fair	Fair			1	3
sugarberry	Celtis laevigata	NDH	Medium	37.8	223.3	12.3	Sm. dec.	Sm. dec.	Medium	Common	Poor	Poor			0	4
eastern redcedar	Juniperus virginiana	WDH	Medium	28.1	158.8	12.1	No change	No change	Medium	Common	Fair	Fair			1	5
blackjack oak	Quercus marilandica	NSL	Medium	35.9	153.1	10.7	Sm. dec.	Sm. dec.	High	Common	Fair	Fair			1	6
pecan	Carya illinoensis	NSH	Low	8.7	140.7	20.8	Sm. dec.	Sm. dec.	Low	Common	Poor	Poor			0	7
black hickory	Carya texana	NDL	High	14.3	122.6	15.4	Lg. dec.	Lg. dec.	Medium	Common	Poor	Poor			0	8
green ash	Fraxinus pennsylvanica	WSH	Low	6.5	86.2	29.7	Sm. dec.	Sm. dec.	Medium	Common	Poor	Poor			0	9
cittamwood/gum bumelia	Sideroxylon lanuginosum ssp.	NSL	Low	35.3	70.6	4.3	Lg. dec.	Lg. dec.	High	Common	Fair	Fair			1	10
ashe juniper	Juniperus ashei	NDH	High	1.6	60.5	6.0	No change	No change	Medium	Common	Fair	Fair			0	11
hackberry	Celtis occidentalis	WDH	Medium	31.6	33.0	5.2	No change	No change	High	Rare	Fair	Fair			1	12
winged elm	Ulmus alata	WDL	Medium	1	14.9	7.6	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	1	13
Osage-orange	Maclura pomifera	NDH	Medium	2.4	11.0	5.1	No change	No change	High	Rare	Fair	Fair	Infill +	Infill +	2	14
American elm	Ulmus americana	WDH	Medium	4.3	8.1	2.2	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	2	15
loblolly pine	Pinus taeda	WDH	High	3.7	5.3	6.4	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	2	16
pignut hickory	Carya glabra	WDL	Medium	0.5	5.1	2.8	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	17
boxelder	Acer negundo	WSH	Low	0.5	4.6	2.5	Sm. dec.	Sm. dec.	High	Rare	Poor	Poor			0	18
water oak	Quercus nigra	WDH	High	5	1.9	3.9	Sm. inc.	Sm. inc.	Medium	Rare	Fair	Fair	Infill +	Infill +	1	19
eastern hophornbeam; ironw	Ostrya virginiana	WSL	Low	2.8	0.5	1.7	Sm. dec.	Sm. dec.	High	Rare	Poor	Poor			0	20
durand oak	Quercus sinuata var. sinuata	NSL	FIA	0.1	0.3	0.1	Unknown	Unknown	Medium	Rare	FIA Only	FIA Only			0	21
red mulberry	Morus rubra	NSL	Low	2	0.3	0.7	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	22
redbay	Persea borbonia	NSL	Low	0.1	0.1	0.0	Lg. dec.	Lg. dec.	High	Rare	Poor	Poor			0	23
water hickory	Carya aquatica	NSL	Medium	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	24
mockernut hickory	Carya alba	WDL	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	25
eastern redbud	Cercis canadensis	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	26
flowering dogwood	Cornus florida	WDL	Medium	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	27
blackgum	Nyssa sylvatica	WDL	Medium	0	0	0	Unknown	Unknown	High	Absent	Unknown	Unknown			0	28
bur oak	Quercus macrocarpa	NDH	Medium	0	0	0	Unknown	Unknown	High	Modeled	Unknown	Unknown			0	29
bluejack oak	Quercus incana	NSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	30
black locust	Robinia pseudoacacia	NDH	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	31