

Section 315E

EcoMap 2007 Climate Change Atlas Tree Species Current and Potential Future Habitat, Capability, and Migration

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sq. km sq. mi FIA Plots
Area of Region 77,922 30,086 136

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		
		Abundant	Common	High	Low	Scenario	Scenario	Scenario	Scenario	SHIFT	SHIFT	
				Reliability	Adaptability	RCP45	RCP85	RCP45	RCP85	RCP45	RCP85	
Ash	2											
Hickory	1											
Maple	0	0		5	13	Increase	0	0	Very Good	0	0	
Oak	3		2	20	28	No Change	6	7	Good	0	0	
Pine	0	Rare	16	21	5	Decrease	11	10	Fair	3	3	
Other	12	Absent	27	1		New	10	10	Poor	6	7	
	18		45	47	46	Unknown	20	20	Very Poor	8	7	
							47	47	FIA Only	1	1	
									Unknown	19	19	
										37	37	
										Likely	4	4
										Infill	7	6
										Migrate	2	2
											13	12

Potential Changes in Climate Variables

Temperature (°F)

Scenario	2009	2039	2069	2099	
Annual	71.9	73.3	74.7	75.4	
Average	71.9	73.7	75.9	78.3	
GFDL45	71.9	77.3	76.4	77.9	
GFDL85	71.9	74.7	78.0	81.6	
HAD45	71.9	73.9	76.3	77.2	
HAD85	71.9	74.5	77.2	80.5	
Growing Season	83.1	84.3	85.5	86.1	
May—Sep	83.1	84.8	86.8	89.3	
GFDL45	83.1	89.7	88.4	90.5	
GFDL85	83.1	86.5	90.2	94.4	
HAD45	83.1	85.1	87.0	87.8	
HAD85	83.1	85.5	88.4	91.5	
Coldest Month	53.8	56.0	56.8	57.2	
Average	53.8	57.1	57.3	57.3	
GFDL45	53.8	57.1	57.3	57.3	
GFDL85	53.8	55.1	56.2	56.9	
HAD45	53.8	54.9	56.1	56.8	
HAD85	53.8	57.1	58.4	60.0	
Warmest Month	86.4	87.6	88.2	88.5	
Average	86.4	88.2	88.9	90.1	
GFDL45	86.4	90.4	91.2	92.2	
GFDL85	86.4	90.6	92.1	94.6	
HAD45	86.4	88.7	89.5	90.1	
HAD85	86.4	89.1	90.7	92.0	

Precipitation (in)

Scenario	2009	2039	2069	2099	
Annual	24.4	27.2	27.1	24.8	
Total	24.4	26.6	26.9	25.6	
GFDL45	24.4	23.1	26.7	20.0	
GFDL85	24.4	23.1	23.0	21.4	
HAD45	24.4	25.7	24.4	26.5	
HAD85	24.4	25.6	25.7	26.1	
Growing Season	13.3	14.8	14.6	13.7	
May—Sep	13.3	15.3	14.4	13.7	
GFDL45	13.3	12.6	15.6	11.1	
GFDL85	13.3	12.9	12.7	11.9	
HAD45	13.3	13.0	12.6	14.1	
HAD85	13.3	14.1	13.2	13.2	

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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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
live oak	Quercus virginiana	NDH	High	17.6	159.6	31.8	Sm. dec.	Sm. dec.	Medium	Common	Poor	Poor	Infill +	Infill +	0	1
cedar elm	Ulmus crassifolia	NDH	Medium	9.8	53.3	22.1	Sm. dec.	Sm. dec.	Low	Common	Poor	Poor	Infill +	Infill +	0	2
ashe juniper	Juniperus ashei	NDH	High	1.3	43.7	13.4	No change	No change	Medium	Rare	Poor	Poor			0	3
sugarberry	Celtis laevigata	NDH	Medium	12.7	26.3	13.7	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	4
post oak	Quercus stellata	WDH	High	4.7	19.2	7.6	No change	No change	High	Rare	Fair	Fair	Infill +	Infill +	2	5
blackjack oak	Quercus marilandica	NSL	Medium	2.4	16.6	14.5	Sm. dec.	Sm. dec.	High	Rare	Poor	Poor	Infill +	Infill +	2	6
hackberry	Celtis occidentalis	WDH	Medium	7.9	14.6	9.5	Sm. dec.	Sm. dec.	High	Rare	Poor	Poor	Infill +	Infill +	2	7
pecan	Carya illinoensis	NSH	Low	0.3	11.5	22.7	Lg. dec.	Sm. dec.	Low	Rare	Very Poor	Very Poor			2	8
green ash	Fraxinus pennsylvanica	WSH	Low	1.3	5.0	11.0	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			2	9
bald cypress	Taxodium distichum	NSH	Medium	0.1	4.9	37.8	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			2	10
red mulberry	Morus rubra	NSL	Low	1.5	2.0	5.0	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	11
cittamwood/gum bumelia	Sideroxylon lanuginosum ssp.	NSL	Low	4.2	1.6	2.8	No change	No change	High	Rare	Fair	Fair	Infill +	Infill +	2	12
black walnut	Juglans nigra	WDH	Low	0.1	0.7	5.2	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	13
black willow	Salix nigra	NSH	Low	1.4	0.5	4.6	No change	No change	Low	Rare	Very Poor	Very Poor			2	14
Osage-orange	Maclura pomifera	NDH	Medium	0.2	0.5	6.2	No change	No change	High	Rare	Fair	Fair	Infill +		2	15
winged elm	Ulmus alata	WDL	Medium	0.6	0.4	11.0	Sm. dec.	No change	Medium	Rare	Very Poor	Poor			0	16
slippery elm	Ulmus rubra	WSL	Low	0.6	0.1	2.7	No change	No change	Medium	Rare	Poor	Poor			0	17
Texas ash	Fraxinus texensis	NDH	FIA	0.6	0.1	2.4	Unknown	Unknown	NA	Rare	FIA Only	FIA Only			0	18
eastern redcedar	Juniperus virginiana	WDH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Likely +	Likely +	3	19
loblolly pine	Pinus taeda	WDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	20
pond cypress	Taxodium ascendens	NSH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			2	21
boxelder	Acer negundo	WSH	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Likely +	Likely +	3	22
striped maple	Acer pensylvanicum	NSL	Medium	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	23
serviceberry	Amelanchier spp.	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	24
pawpaw	Asimina triloba	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	25
water hickory	Carya aquatica	NSL	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	26
bitternut hickory	Carya cordiformis	WSL	Low	0	0	0	Unknown	Unknown	High	Absent	Unknown	Unknown			0	27
mockernut hickory	Carya alba	WDL	Medium	0	0	0	Unknown	Unknown	High	Modeled	Unknown	Unknown			0	28
eastern redbud	Cercis canadensis	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	29
flowering dogwood	Cornus florida	WDL	Medium	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	30
common persimmon	Diospyros virginiana	NSL	Low	0	0	0	Unknown	Unknown	High	Absent	Unknown	Unknown			0	31
white ash	Fraxinus americana	WDL	Medium	0	0	0	Unknown	Unknown	Low	Absent	Unknown	Unknown			0	32
honeylocust	Gleditsia triacanthos	NSH	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Likely +	Likely +	3	33
silverbell	Halesia spp.	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	34
bigleaf magnolia	Magnolia macrophylla	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	35
redbay	Persea borbonia	NSL	Low	0	0	0	Unknown	Unknown	High	Absent	Unknown	Unknown			0	36
pin cherry	Prunus pensylvanica	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	37
cherrybark oak; swamp red o.	Quercus pagoda	NSL	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	38
overcup oak	Quercus lyrata	NSL	Medium	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat			3	39
bur oak	Quercus macrocarpa	NDH	Medium	0	0	0	Unknown	Unknown	High	Modeled	Unknown	Unknown			0	40
Shumard oak	Quercus shumardii	NSL	Low	0	0	0	Unknown	Unknown	High	Absent	Unknown	Unknown			0	41
black oak	Quercus velutina	WDH	High	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	42
bluejack oak	Quercus incana	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	43
black locust	Robinia pseudoacacia	NDH	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	44
cabbage palmetto	Sabal palmetto	NDH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			0	45
American basswood	Tilia americana	WSL	Medium	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	46
American elm	Ulmus americana	WDH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Likely +	Likely +	3	47