

HUC 080901 Lower Mississippi-New Orleans

HUC 6 Watershed Climate Change Atlas Tree Species

Current and Potential Future Habitat, Capability, and Migration

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

sq. km sq. mi FIA Plots
Area of Region 2,221.3 857.6

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	Reliability	Adaptability	Potential Change in Habitat Suitability		Capability to Cope or Persist		Migration Potential	
							Scenario	Scenario	Scenario	Scenario	SHIFT	SHIFT
							RCP45	RCP85	RCP45	RCP85	RCP45	RCP85
Ash	1			High	5	5	Increase	0	5	Very Good	0	0
Hickory	2			Medium	14	23	No Change	13	9	Good	1	2
Maple	2	Abundant	0	Low	16	7	Decrease	6	5	Fair	2	5
Oak	4	Common	3	FIA	0		New	10	10	Poor	10	8
Pine	0	Rare	16				Unknown	6	6	Very Poor	6	4
Other	10	Absent	15							FIA Only	0	0
	19		34		35	35		35	35	Unknown	6	6
											25	25

Potential Changes in Climate Variables

Temperature (°F)

	Scenario	2009	2039	2069	2099	
Annual Average	CCSM45	36.1	36.3	36.4	36.5	
	CCSM85	36.1	36.3	36.5	36.7	
	GFDL45	36.1	36.6	36.6	36.7	
	GFDL85	36.1	36.4	36.7	37.0	
	HAD45	36.1	36.3	36.6	36.7	
	HAD85	36.1	36.3	36.6	37.0	
Growing Season May—Sep	CCSM45	37.3	37.4	37.5	37.6	
	CCSM85	37.3	37.4	37.7	37.9	
	GFDL45	37.3	37.9	37.7	37.9	
	GFDL85	37.3	37.6	37.9	38.3	
	HAD45	37.3	37.5	37.7	37.8	
	HAD85	37.3	37.5	37.9	38.1	
Coldest Month Average	CCSM45	34.3	34.5	34.6	34.6	
	CCSM85	34.3	34.5	34.7	34.8	
	GFDL45	34.3	34.6	34.6	34.7	
	GFDL85	34.3	34.5	34.6	34.7	
	HAD45	34.3	34.3	34.4	34.5	
	HAD85	34.3	34.4	34.5	34.7	
Warmest Month Average	CCSM45	37.6	37.7	37.8	37.8	
	CCSM85	37.6	37.7	37.8	37.9	
	GFDL45	37.6	37.9	37.9	38.0	
	GFDL85	37.6	37.8	38.0	38.2	
	HAD45	37.6	37.8	37.9	38.0	
	HAD85	37.6	37.9	38.0	38.1	

Precipitation (in)

	Scenario	2009	2039	2069	2099	
Annual Total	CCSM45	7.0	7.3	7.8	7.7	
	CCSM85	7.0	7.4	7.5	7.4	
	GFDL45	7.0	7.6	8.0	7.5	
	GFDL85	7.0	7.4	7.6	7.1	
	HAD45	7.0	6.4	6.9	7.4	
	HAD85	7.0	7.4	6.8	7.0	
Growing Season May—Sep	CCSM45	3.4	3.6	3.7	3.7	
	CCSM85	3.4	3.6	3.7	3.4	
	GFDL45	3.4	4.0	4.2	3.8	
	GFDL85	3.4	3.8	4.0	3.9	
	HAD45	3.4	3.3	3.4	3.6	
	HAD85	3.4	3.6	2.9	3.0	

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	ChngCI45	ChngCI85	Adap	Abund	Capabil45	Capabil85	SHIFT45	SHIFT85	SSO	N
red maple	Acer rubrum	WDH	High	12	295.6	2.1	No change	Sm. dec.	High	Common	Good	Fair			2	1
bald cypress	Taxodium distichum	NSH	Medium	12	276.0	1.3	Sm. dec.	Sm. dec.	Medium	Common	Poor	Poor	Infill +	Infill +	2	2
green ash	Fraxinus pennsylvanica	WSH	Low	6.2	86.1	0.5	No change	No change	Medium	Common	Fair	Fair	Infill +	Infill +	2	3
sweetgum	Liquidambar styraciflua	WDH	High	6.7	35.3	0.5	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	2	4
water tupelo	Nyssa aquatica	NSH	Medium	8.6	34.1	0.5	No change	No change	Low	Rare	Very Poor	Very Poor			2	5
black willow	Salix nigra	NSH	Low	7.1	30.8	0.9	No change	No change	Low	Rare	Very Poor	Very Poor			2	6
sugarberry	Celtis laevigata	NDH	Medium	6.7	21.2	0.3	No change	Sm. inc.	Medium	Rare	Poor	Fair	Infill +	Infill +	2	7
boxelder	Acer negundo	WSH	Low	7.9	15.9	0.3	No change	No change	High	Rare	Fair	Fair	Infill +	Infill +	2	8
live oak	Quercus virginiana	NDH	High	5.3	14.1	0.3	No change	Sm. inc.	Medium	Rare	Poor	Fair			2	9
American elm	Ulmus americana	WDH	Medium	7.6	13.6	0.1	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	2	10
pecan	Carya illinoensis	NSH	Low	2.6	8.0	0.4	Sm. dec.	Sm. inc.	Low	Rare	Very Poor	Poor		Infill +	2	11
water oak	Quercus nigra	WDH	High	5.3	7.3	0.2	No change	No change	Medium	Rare	Poor	Poor		Infill +	2	12
pond cypress	Taxodium ascendens	NSH	Medium	2.6	5.9	0.3	No change	Lg. inc.	Medium	Rare	Poor	Good			2	13
laurel oak	Quercus laurifolia	NDH	Medium	3.2	5.3	0.3	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	14
willow oak	Quercus phellos	NSL	Low	2.6	2.8	0.1	No change	Lg. inc.	Medium	Rare	Poor	Good			2	15
eastern hophornbeam; ironw	Ostrya virginiana	WSL	Low	7.7	2.5	0.1	Sm. dec.	Sm. dec.	High	Rare	Poor	Poor			0	16
water hickory	Carya aquatica	NSL	Medium	4.5	1.3	0.1	No change	No change	Medium	Rare	Poor	Poor			0	17
sycamore	Platanus occidentalis	NSL	Low	3.2	0.9	0.1	Lg. dec.	No change	Medium	Rare	Very Poor	Poor			0	18
sassafras	Sassafras albidum	WSL	Low	0.9	0.2	0	Sm. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	19
Atlantic white-cedar	Chamaecyparis thyoides	NSH	Low	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat			3	20
loblolly pine	Pinus taeda	WDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate ++	Migrate ++	3	21
serviceberry	Amelanchier spp.	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	22
cittamwood/gum bumelia	Sideroxylon lanuginosum ssp.	NSL	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat			3	23
American hornbeam; muscle	Carpinus caroliniana	WSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	24
black ash	Fraxinus nigra	WSH	Medium	0	0	0	Unknown	Unknown	Low	Absent	Unknown	Unknown			0	25
silverbell	Halesia spp.	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	26
bigleaf magnolia	Magnolia macrophylla	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	27
red mulberry	Morus rubra	NSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	28
pin cherry	Prunus pensylvanica	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	29
cherrybark oak; swamp red o	Quercus pagoda	NSL	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate +	3	30
overcup oak	Quercus lyrata	NSL	Medium	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat		Migrate +	3	31
Nuttall oak	Quercus texana	NSH	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat			0	32
cabbage palmetto	Sabal palmetto	NDH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			0	33
winged elm	Ulmus alata	WDL	Medium	0	0	0	Unknown	Unknown	Medium	Modeled	Unknown	Unknown			0	34
cedar elm	Ulmus crassifolia	NDH	Medium	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat			3	35