

HUC 120903 Lower Colorado

HUC 6 Watershed Climate Change Atlas Tree Species

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Landscape Change Research Group
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Current and Potential Future Habitat, Capability, and Migration

	sq. km	sq. mi	FIA Plots
Area of Region	7,516.6	2,902.2	79

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	3			High	9	13	Increase	5	7	Very Good	1	1	Likely	0	0
Hickory	2			Medium	13	19	No Change	8	6	Good	3	5	Infill	4	5
Maple	1	Abundant	2	Low	13	4	Decrease	17	17	Fair	7	5	Migrate	4	3
Oak	8	Common	8	FIA	2		New	4	4	Poor	13	13		8	8
Pine	1	Rare	22				Unknown	3	3	Very Poor	6	6			
Other	17	Absent	5							FIA Only	2	2			
	32		37		37	36		37	37	Unknown	1	1			
											33	33			

Potential Changes in Climate Variables

Temperature (°F)

	Scenario	2009	2039	2069	2099	
Annual Average	CCSM45	51.5	52.4	53.0	53.2	
	CCSM85	51.5	52.5	53.6	54.8	
	GFDL45	51.5	53.9	53.7	54.5	
	GFDL85	51.5	52.9	54.5	56.4	
	HAD45	51.5	52.6	53.9	54.4	
	HAD85	51.5	52.8	54.5	56.2	
Growing Season (May—Sep)	CCSM45	58.1	58.9	59.2	59.6	
	CCSM85	58.1	59.0	60.0	61.4	
	GFDL45	58.1	61.0	60.6	61.8	
	GFDL85	58.1	59.9	61.7	63.9	
	HAD45	58.1	59.2	60.3	60.7	
	HAD85	58.1	59.4	61.3	62.8	
Coldest Month (Average)	CCSM45	41.2	42.5	42.8	42.9	
	CCSM85	41.2	42.4	43.0	43.6	
	GFDL45	41.2	43.2	43.2	43.3	
	GFDL85	41.2	41.8	42.4	42.7	
	HAD45	41.2	41.5	42.4	42.7	
	HAD85	41.2	42.7	43.4	44.4	
Warmest Month (Average)	CCSM45	60.3	60.9	61.2	61.3	
	CCSM85	60.3	61.2	61.6	62.2	
	GFDL45	60.3	62.4	62.7	63.3	
	GFDL85	60.3	62.5	63.4	64.8	
	HAD45	60.3	61.5	62.0	62.2	
	HAD85	60.3	61.8	62.7	63.2	

Precipitation (in)

	Scenario	2009	2039	2069	2099	
Annual Total	CCSM45	20.2	20.4	22.8	20.9	
	CCSM85	20.2	20.9	22.1	21.6	
	GFDL45	20.2	20.2	23.6	18.8	
	GFDL85	20.2	19.8	20.7	19.7	
	HAD45	20.2	21.1	20.2	20.7	
	HAD85	20.2	21.4	18.9	20.0	
Growing Season (May—Sep)	CCSM45	8.8	9.4	10.1	9.2	
	CCSM85	8.8	9.1	9.4	8.5	
	GFDL45	8.8	9.2	11.8	8.6	
	GFDL85	8.8	9.4	9.7	9.4	
	HAD45	8.8	8.9	8.6	9.2	
	HAD85	8.8	9.2	8.1	8.4	

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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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
post oak	Quercus stellata	WDH	High	72	829.0	23.7	Sm. dec.	Sm. dec.	High	Abundant	Good	Good			1	1
eastern redcedar	Juniperus virginiana	WDH	Medium	71	505.4	16.9	Sm. dec.	Sm. dec.	Medium	Abundant	Fair	Fair			0	2
loblolly pine	Pinus taeda	WDH	High	20.7	192.7	24.8	Sm. dec.	Sm. dec.	Medium	Common	Poor	Poor			0	3
cedar elm	Ulmus crassifolia	NDH	Medium	53.9	161.1	7.6	Sm. inc.	Sm. inc.	Low	Common	Fair	Fair			1	4
live oak	Quercus virginiana	NDH	High	28.1	102.0	11.9	Sm. inc.	Sm. inc.	Medium	Common	Good	Good			1	5
sugarberry	Celtis laevigata	NDH	Medium	32.5	95.1	16.3	No change	No change	Medium	Common	Fair	Fair			1	6
pecan	Carya illinoensis	NSH	Low	22.3	91.1	11.5	Sm. dec.	Sm. dec.	Low	Common	Poor	Poor			0	7
ashe juniper	Juniperus ashei	NDH	High	6.5	61.4	6.1	Sm. dec.	Sm. dec.	Medium	Common	Poor	Poor			0	8
green ash	Fraxinus pennsylvanica	WSH	Low	19.6	57.7	6.5	Sm. dec.	Sm. dec.	Medium	Common	Poor	Poor			0	9
blackjack oak	Quercus marilandica	NSL	Medium	36.1	50.1	3.7	Sm. inc.	Sm. inc.	High	Common	Very Good	Very Good			1	10
hackberry	Celtis occidentalis	WDH	Medium	6.6	45.5	5.7	Sm. dec.	Sm. dec.	High	Rare	Poor	Poor	Infill +	Infill +	1	11
water oak	Quercus nigra	WDH	High	33.9	28.7	3.9	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			1	12
sycamore	Platanus occidentalis	NSL	Low	1.3	19.7	14.8	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	13
cittamwood/gum bumelia	Sideroxylon lanuginosum ssp.	NSL	Low	22.7	19.1	1.8	No change	Sm. inc.	High	Rare	Fair	Good			1	14
boxelder	Acer negundo	WSH	Low	3.9	15.2	1.8	Sm. dec.	Sm. dec.	High	Rare	Poor	Poor	Infill +	Infill +	2	15
Osage-orange	Maclura pomifera	NDH	Medium	16.5	13.6	8.0	No change	Sm. inc.	High	Rare	Fair	Good			1	16
American elm	Ulmus americana	WDH	Medium	4.6	12.0	1.5	No change	No change	Medium	Rare	Poor	Poor			1	17
red mulberry	Morus rubra	NSL	Low	8.1	7.5	3.2	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	18
black oak	Quercus velutina	WDH	High	1.3	7.4	5.5	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	19
winged elm	Ulmus alata	WDL	Medium	4.7	7.3	3.5	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	1	20
black willow	Salix nigra	NSH	Low	4.9	5.0	13.9	Sm. dec.	Sm. dec.	Low	Rare	Very Poor	Very Poor			0	21
black hickory	Carya texana	NDL	High	5.8	2.1	0.8	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	2	22
Texas ash	Fraxinus texensis	NDH	FIA	2.7	1.2	1.9	Unknown	Unknown	NA	Rare	FIA Only	FIA Only			0	23
Shumard oak	Quercus shumardii	NSL	Low	2.7	0.7	1.1	Sm. dec.	Sm. dec.	High	Rare	Poor	Poor			0	24
bur oak	Quercus macrocarpa	NDH	Medium	0.1	0.6	0.0	Sm. dec.	Sm. dec.	High	Rare	Poor	Poor			0	25
white ash	Fraxinus americana	WDL	Medium	13.3	0.5	0.4	Lg. inc.	Lg. inc.	Low	Rare	Fair	Fair			0	26
honeylocust	Gleditsia triacanthos	NSH	Low	0.1	0.4	0.0	No change	No change	High	Rare	Fair	Fair			0	27
durand oak	Quercus sinuata var. sinuata	NSL	FIA	5.3	0.4	1.1	Unknown	Unknown	Medium	Rare	FIA Only	FIA Only			0	28
slippery elm	Ulmus rubra	WSL	Low	3.1	0.4	0.7	No change	No change	Medium	Rare	Poor	Poor		Infill +	2	29
black walnut	Juglans nigra	WDH	Low	0.1	0.3	0.0	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	30
flowering dogwood	Cornus florida	WDL	Medium	0.1	0.2	0.0	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	31
common persimmon	Diospyros virginiana	NSL	Low	4.9	0.1	0.3	Lg. dec.	Lg. dec.	High	Rare	Poor	Poor			0	32
shortleaf pine	Pinus echinata	WDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +		3	33
bitternut hickory	Carya cordiformis	WSL	Low	0	0	0	Unknown	Unknown	High	Absent	Unknown	Unknown			0	34
mockernut hickory	Carya alba	WDL	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Migrate ++	Migrate ++	3	35
sweetgum	Liquidambar styraciflua	WDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate ++	Migrate +	3	36
southern red oak	Quercus falcata	WDL	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Migrate +	Migrate ++	3	37