

HUC 121102 Southwestern Texas Coastal

HUC 6 Watershed Climate Change Atlas Tree Species

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

Current and Potential Future Habitat, Capability, and Migration

	sq. km	sq. mi	FIA Plots
Area of Region	31,229	12,057	29

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	0			High	4	Increase	0	0	Very Good	0	0
Hickory	0			Medium	9	No Change	3	3	Good	0	0
Maple	0	Abundant	0	Low	12	Decrease	2	2	Fair	1	1
Oak	2	Common	1	FIA	0	New	7	7	Poor	2	2
Pine	0	Rare	4			Unknown	13	13	Very Poor	2	2
Other	3	Absent	20						FIA Only	0	0
	5		25		25		25	25	Unknown	13	13
										18	18

Potential Changes in Climate Variables

Temperature (°F)

	Scenario	2009	2039	2069	2099	
Annual Average	CCSM45	63.2	64.2	65.4	65.8	
	CCSM85	63.2	64.5	66.2	68.0	
	GFDL45	63.2	66.7	66.6	67.6	
	GFDL85	63.2	65.2	67.8	70.3	
	HAD45	63.2	64.7	66.4	67.2	
	HAD85	63.2	65.0	67.0	69.5	
Growing Season (May—Sep)	CCSM45	71.0	71.9	72.8	73.2	
	CCSM85	71.0	72.2	73.7	75.6	
	GFDL45	71.0	75.1	74.9	76.2	
	GFDL85	71.0	73.4	76.2	79.1	
	HAD45	71.0	72.4	73.8	74.5	
	HAD85	71.0	72.7	74.7	77.1	
Coldest Month Average	CCSM45	50.2	51.8	52.4	52.7	
	CCSM85	50.2	51.8	52.7	53.8	
	GFDL45	50.2	52.6	52.9	52.9	
	GFDL85	50.2	51.4	52.3	53.0	
	HAD45	50.2	51.2	52.2	52.8	
	HAD85	50.2	52.8	53.8	55.0	
Warmest Month Average	CCSM45	73.2	74.1	74.5	74.7	
	CCSM85	73.2	74.5	75.0	75.9	
	GFDL45	73.2	75.9	76.6	77.2	
	GFDL85	73.2	76.0	77.2	78.9	
	HAD45	73.2	74.7	75.3	75.8	
	HAD85	73.2	75.0	76.0	77.1	

Precipitation (in)

	Scenario	2009	2039	2069	2099	
Annual Total	CCSM45	18.9	20.8	20.5	19.3	
	CCSM85	18.9	20.4	20.5	18.6	
	GFDL45	18.9	18.5	20.8	15.9	
	GFDL85	18.9	18.3	17.9	16.9	
	HAD45	18.9	19.8	18.8	20.0	
	HAD85	18.9	20.2	20.5	20.0	
Growing Season (May—Sep)	CCSM45	10.7	11.7	11.4	10.9	
	CCSM85	10.7	12.3	11.7	10.3	
	GFDL45	10.7	10.7	12.9	9.3	
	GFDL85	10.7	10.9	10.4	10.0	
	HAD45	10.7	10.4	9.9	10.9	
	HAD85	10.7	11.9	11.0	10.3	

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	ChngCl45	ChngCl85	Adap	Abund	Capabil45	Capabil85	SHIFT45	SHIFT85	SSO	N
live oak	Quercus virginiana	NDH	High	14.6	109.5	79.5	No change	No change	Medium	Common	Fair	Fair	Infill +	Infill +	1	1
sugarberry	Celtis laevigata	NDH	Medium	6.1	12.7	16.0	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	2	2
cedar elm	Ulmus crassifolia	NDH	Medium	0.4	4.5	13.9	Sm. dec.	Sm. dec.	Low	Rare	Very Poor	Very Poor			2	3
black willow	Salix nigra	NSH	Low	1.4	0.9	10.3	No change	No change	Low	Rare	Very Poor	Very Poor			2	4
post oak	Quercus stellata	WDH	High	1.3	0.2	1.7	Lg. dec.	Lg. dec.	High	Rare	Poor	Poor			0	5
ashe juniper	Juniperus ashei	NDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			0	6
bald cypress	Taxodium distichum	NSH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	7
pond cypress	Taxodium ascendens	NSH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			0	8
serviceberry	Amelanchier spp.	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	9
pawpaw	Asimina triloba	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	10
bitternut hickory	Carya cordiformis	WSL	Low	0	0	0	Unknown	Unknown	High	Absent	Unknown	Unknown			0	11
pecan	Carya illinoensis	NSH	Low	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	12
eastern redbud	Cercis canadensis	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	13
flowering dogwood	Cornus florida	WDL	Medium	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	14
silverbell	Halesia spp.	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	15
American holly	Ilex opaca	NSL	Medium	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	16
cucumbertree	Magnolia acuminata	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	17
bigleaf magnolia	Magnolia macrophylla	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	18
blackjack oak	Quercus marilandica	NSL	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	19
Shumard oak	Quercus shumardii	NSL	Low	0	0	0	Unknown	Unknown	High	Absent	Unknown	Unknown			0	20
black oak	Quercus velutina	WDH	High	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	21
bluejack oak	Quercus incana	NSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	22
black locust	Robinia pseudoacacia	NDH	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	23
cabbage palmetto	Sabal palmetto	NDH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			0	24
American basswood	Tilia americana	WSL	Medium	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	25