

# HUC 120904 San Bernard 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

Area of Region    sq. km    sq. mi    FIA Plots  
5,232.0    2,020.1    27

#### 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	2			High	9	14	Increase	1	3	Very Good	0	0	Likely	3	3
Hickory	3			Medium	17	22	No Change	10	9	Good	1	3	Infill	8	11
Maple	1	Abundant	0	Low	14	4	Decrease	16	15	Fair	7	5	Migrate	4	2
Oak	6	Common	6	FIA	0		New	9	9	Poor	9	10			
Pine	1	Rare	21				Unknown	4	4	Very Poor	8	7			
Other	14	Absent	13							FIA Only	0	0			
	<b>27</b>		<b>40</b>		<b>40</b>	<b>40</b>		<b>40</b>	<b>40</b>	Unknown	4	4		<b>15</b>	<b>16</b>
											<b>29</b>	<b>29</b>			

#### Potential Changes in Climate Variables

##### Temperature (°F)

Scenario	2009	2039	2069	2099	
Annual	51.1	51.8	52.5	52.6	
Average	51.1	51.9	53.0	54.0	
GFDL45	51.1	53.4	53.1	53.7	
GFDL85	51.1	52.3	53.8	55.4	
HAD45	51.1	52.0	53.2	53.7	
HAD85	51.1	52.2	53.7	55.3	
Growing Season	56.8	57.4	57.8	58.0	
May—Sep	56.8	57.5	58.4	59.6	
GFDL45	56.8	59.4	59.0	59.9	
GFDL85	56.8	58.2	59.9	61.7	
HAD45	56.8	57.7	58.7	59.1	
HAD85	56.8	57.9	59.4	60.7	
Coldest Month	42.0	43.1	43.5	43.6	
Average	42.0	43.2	43.7	44.4	
GFDL45	42.0	43.7	43.8	43.9	
GFDL85	42.0	42.7	43.3	43.6	
HAD45	42.0	42.5	43.3	43.7	
HAD85	42.0	43.5	44.1	45.0	
Warmest Month	58.4	58.9	59.1	59.2	
Average	58.4	59.0	59.4	59.9	
GFDL45	58.4	60.0	60.3	60.8	
GFDL85	58.4	60.1	60.9	62.0	
HAD45	58.4	59.5	59.8	60.0	
HAD85	58.4	59.6	60.4	60.8	

##### Precipitation (in)

Scenario	2009	2039	2069	2099	
Annual	23.6	25.2	27.2	25.6	
Total	23.6	25.1	25.6	24.9	
GFDL45	23.6	24.4	28.3	22.6	
GFDL85	23.6	23.6	24.5	23.4	
HAD45	23.6	24.5	23.1	24.7	
HAD85	23.6	25.7	23.0	24.1	
Growing Season	10.9	12.5	13.1	11.8	
May—Sep	10.9	11.9	11.6	10.6	
GFDL45	10.9	11.9	15.2	11.1	
GFDL85	10.9	11.8	12.1	12.0	
HAD45	10.9	10.8	10.5	11.8	
HAD85	10.9	11.7	10.7	11.0	

**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	ChngCl45	ChngCl85	Adap	Abund	Capabil45	Capabil85	SHIFT45	SHIFT85	SSO	N
sugarberry	Celtis laevigata	NDH	Medium	56.3	306.3	13.0	Sm. dec.	Sm. dec.	Medium	Common	Poor	Poor			0	1
cedar elm	Ulmus crassifolia	NDH	Medium	48	237.5	16.6	Sm. dec.	Sm. dec.	Low	Common	Poor	Poor			0	2
pecan	Carya illinoensis	NSH	Low	55.1	217.8	14.3	Lg. dec.	Lg. dec.	Low	Common	Very Poor	Very Poor			0	3
live oak	Quercus virginiana	NDH	High	42.4	163.0	18.1	No change	No change	Medium	Common	Fair	Fair	Infill +	Infill +	1	4
green ash	Fraxinus pennsylvanica	WSH	Low	29.1	100.5	14.6	Sm. dec.	Sm. dec.	Medium	Common	Poor	Poor			0	5
water oak	Quercus nigra	WDH	High	34	87.7	6.7	No change	No change	Medium	Common	Fair	Fair	Infill +	Infill +	1	6
American elm	Ulmus americana	WDH	Medium	32.6	40.4	10.1	Lg. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	7
eastern redcedar	Juniperus virginiana	WDH	Medium	17.7	27.8	12.9	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	8
white ash	Fraxinus americana	WDL	Medium	5.5	22.3	8.8	Lg. dec.	Lg. dec.	Low	Rare	Very Poor	Very Poor			0	9
boxelder	Acer negundo	WSH	Low	21.6	20.0	12.0	Sm. inc.	Sm. inc.	High	Rare	Good	Good	Infill ++	Infill ++	1	10
hackberry	Celtis occidentalis	WDH	Medium	10.4	16.6	11.0	No change	Sm. inc.	High	Rare	Fair	Good	Infill +	Infill ++	1	11
loblolly pine	Pinus taeda	WDH	High	6.8	15.9	26.6	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	2	12
slippery elm	Ulmus rubra	WSL	Low	2.1	14.2	7.5	Sm. dec.	No change	Medium	Rare	Very Poor	Poor		Infill +	2	13
Osage-orange	Maclura pomifera	NDH	Medium	11.2	11.5	1.4	Lg. dec.	Lg. dec.	High	Rare	Poor	Poor			0	14
post oak	Quercus stellata	WDH	High	2.4	10.6	6.3	No change	No change	High	Rare	Fair	Fair	Infill +	Infill +	2	15
Shumard oak	Quercus shumardii	NSL	Low	3.7	7.6	1.9	Sm. dec.	Sm. dec.	High	Rare	Poor	Poor			0	16
black hickory	Carya texana	NDL	High	13.1	6.1	1.8	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			2	17
cittamwood/gum bumelia	Sideroxylon lanuginosum ssp.	NSL	Low	5.5	5.7	1.6	No change	Sm. inc.	High	Rare	Fair	Good	Infill +	Infill ++	2	18
sycamore	Platanus occidentalis	NSL	Low	5.4	2.5	3.3	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	2	19
bitternut hickory	Carya cordiformis	WSL	Low	2.1	1.8	1.0	Very Lg. dec.	Very Lg. dec.	High	Rare	Lost	Lost			0	20
bald cypress	Taxodium distichum	NSH	Medium	6.1	1.6	2.3	No change	No change	Medium	Rare	Poor	Poor		Infill +	2	21
red mulberry	Morus rubra	NSL	Low	2.1	1.4	0.7	Very Lg. dec.	Very Lg. dec.	Medium	Rare	Lost	Lost			0	22
honeylocust	Gleditsia triacanthos	NSH	Low	4.4	1.1	1.2	No change	No change	High	Rare	Fair	Fair			0	23
blackjack oak	Quercus marilandica	NSL	Medium	2.4	1.0	0.6	No change	No change	High	Rare	Fair	Fair		Infill +	2	24
bur oak	Quercus macrocarpa	NDH	Medium	2.4	0.8	0.5	Sm. dec.	Sm. dec.	High	Rare	Poor	Poor			0	25
black walnut	Juglans nigra	WDH	Low	2.4	0.5	0.3	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	26
flowering dogwood	Cornus florida	WDL	Medium	2.4	0.3	0.2	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	27
ashe juniper	Juniperus ashei	NDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			0	28
shortleaf pine	Pinus echinata	WDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +		3	29
mockernut hickory	Carya alba	WDL	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Likely +	Likely +	3	30
sweetgum	Liquidambar styraciflua	WDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate ++		3	31
bigleaf magnolia	Magnolia macrophylla	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	32
redbay	Persea borbonia	NSL	Low	0	0	0	Unknown	Unknown	High	Absent	Unknown	Unknown			0	33
southern red oak	Quercus falcata	WDL	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Migrate ++	Migrate ++	3	34
cherrybark oak; swamp red o.	Quercus pagoda	NSL	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Likely +	Likely +	3	35
Nuttall oak	Quercus texana	NSH	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat			0	36
black oak	Quercus velutina	WDH	High	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	37
black willow	Salix nigra	NSH	Low	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	38
American basswood	Tilia americana	WSL	Medium	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	39
winged elm	Ulmus alata	WDL	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Likely +	Likely +	3	40

