

	sq. km	sq. mi	FIA Plots
Area of Region	8,355.2	3,226.0	4

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	
		Model	Reliability	Adaptability	Scenario	Scenario	Scenario	Scenario	SHIFT	SHIFT	
		High	2	1	RCP45	RCP85	RCP45	RCP85	RCP45	RCP85	
Ash	0				Increase	0	0	Very Good	0	0	
Hickory	0				No Change	3	3	Good	0	0	
Maple	0	Abundant	0		Decrease	0	0	Fair	1	1	
Oak	1	Common	1		New	4	4	Poor	1	1	
Pine	0	Rare	2		Unknown	4	4	Very Poor	1	1	
Other	2	Absent	8					FIA Only	0	0	
	3		11			11	11	Unknown	4	4	
									7	7	

Potential Changes in Climate Variables

Temperature (°F)

	Scenario	2009	2039	2069	2099	
Annual Average	CCSM45	74.0	75.3	76.8	77.2	
	CCSM85	74.0	75.7	77.8	80.1	
	GFDL45	74.0	79.2	78.2	79.4	
	GFDL85	74.0	76.4	79.6	82.8	
	HAD45	74.0	75.9	78.0	79.1	
	HAD85	74.0	76.3	78.8	82.0	
Growing Season (May—Sep)	CCSM45	83.3	84.5	85.7	86.1	
	CCSM85	83.3	84.9	86.8	89.1	
	GFDL45	83.3	89.3	88.2	89.6	
	GFDL85	83.3	86.2	89.6	93.2	
	HAD45	83.3	85.0	86.8	87.8	
	HAD85	83.3	85.4	87.9	90.9	
Coldest Month (Average)	CCSM45	58.0	59.8	60.8	61.1	
	CCSM85	58.0	60.0	61.1	62.5	
	GFDL45	58.0	60.9	61.4	61.5	
	GFDL85	58.0	59.7	60.9	61.9	
	HAD45	58.0	59.4	60.8	61.6	
	HAD85	58.0	61.4	62.5	64.3	
Warmest Month (Average)	CCSM45	86.0	87.0	87.6	87.8	
	CCSM85	86.0	87.6	88.2	89.3	
	GFDL45	86.0	89.0	90.0	90.7	
	GFDL85	86.0	89.0	90.6	92.7	
	HAD45	86.0	87.8	88.5	89.2	
	HAD85	86.0	88.2	89.4	90.8	

Precipitation (in)

	Scenario	2009	2039	2069	2099	
Annual Total	CCSM45	25.1	26.7	26.3	25.0	
	CCSM85	25.1	25.9	26.3	23.1	
	GFDL45	25.1	25.1	27.4	22.1	
	GFDL85	25.1	24.7	24.4	22.9	
	HAD45	25.1	25.2	24.4	25.5	
	HAD85	25.1	26.1	26.3	25.2	
Growing Season (May—Sep)	CCSM45	14.6	15.2	14.8	14.1	
	CCSM85	14.6	15.8	15.2	12.9	
	GFDL45	14.6	15.1	17.3	13.3	
	GFDL85	14.6	14.9	14.3	13.8	
	HAD45	14.6	13.5	13.0	13.9	
	HAD85	14.6	16.0	14.4	12.9	

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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Palo Alto Battlefield

National Park Climate Change Atlas Tree Species

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Northern Research Station
Landscape Change Research Group
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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	6.8	53.1	65.1	No change	No change	Medium	Common	Fair	Fair	Infill +	Infill +	2	1
black willow	Salix nigra	NSH	Low	4.6	3.3	10.5	No change	No change	Low	Rare	Very Poor	Very Poor			2	2
sugarberry	Celtis laevigata	NDH	Medium	4.6	3.0	9.5	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	2	3
bald cypress	Taxodium distichum	NSH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	4
pond cypress	Taxodium ascendens	NSH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			0	5
bitternut hickory	Carya cordiformis	WSL	Low	0	0	0	Unknown	Unknown	High	Absent	Unknown	Unknown			0	6
eastern redbud	Cercis canadensis	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	7
cucumbertree	Magnolia acuminata	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	8
black oak	Quercus velutina	WDH	High	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	9
bluejack oak	Quercus incana	NSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	10
cabbage palmetto	Sabal palmetto	NDH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			0	11