

HUC 011000 Connecticut 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	11,776	4,546.7	302

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										
		Abundant	Common	High	Medium	Increase	No Change	Decrease	New	Unknown	Very Good	Good	Fair	Poor	Very Poor	FIA Only	Unknown	SHIFT RCP45	SHIFT RCP85	
Ash	3																			
Hickory	5																			
Maple	5	9		24	21	18	20	9	8	3	3									
Oak	10	16		34	49	12	9	10	12	5	6									
Pine	4	37		28	19	25	26	9	11	5	12									
Other	35	30		7		26	27	10	7	5	4									
	62	92		93	89	93	93	60	59											

Potential Changes in Climate Variables

Temperature (°F)

Scenario	2009	2039	2069	2099		
Annual	CCSM45	43.0	44.2	45.6	45.7	
Average	CCSM85	43.0	44.5	46.1	48.1	
	GFDL45	43.0	44.8	46.7	47.5	
	GFDL85	43.0	45.0	47.5	50.3	
	HAD45	43.0	44.6	46.8	47.9	
	HAD85	43.0	44.6	47.4	50.6	
Growing Season	CCSM45	53.8	55.2	56.3	56.6	
	CCSM85	53.8	55.3	56.9	59.2	
May—Sep	GFDL45	53.8	55.8	58.0	58.8	
	GFDL85	53.8	56.1	58.9	61.7	
	HAD45	53.8	55.5	57.6	58.9	
	HAD85	53.8	55.0	58.2	61.6	
Coldest Month	CCSM45	26.4	27.4	28.5	28.9	
	CCSM85	26.4	28.1	28.8	30.2	
Average	GFDL45	26.4	28.7	29.6	30.3	
	GFDL85	26.4	28.8	29.9	31.3	
	HAD45	26.4	27.5	29.2	29.4	
	HAD85	26.4	28.2	29.6	31.5	
Warmest Month	CCSM45	57.9	59.5	60.1	60.2	
	CCSM85	57.9	59.6	60.6	61.8	
Average	GFDL45	57.9	59.8	60.9	61.7	
	GFDL85	57.9	60.4	62.0	63.8	
	HAD45	57.9	59.8	60.8	61.5	
	HAD85	57.9	59.3	60.9	63.1	

Precipitation (in)

Scenario	2009	2039	2069	2099		
Annual	CCSM45	33.0	33.1	32.7	36.3	
Total	CCSM85	33.0	33.7	35.4	37.6	
	GFDL45	33.0	36.1	38.3	36.9	
	GFDL85	33.0	35.1	37.3	39.4	
	HAD45	33.0	33.7	35.8	35.6	
	HAD85	33.0	35.8	35.9	37.3	
Growing Season	CCSM45	14.0	15.5	14.6	15.8	
	CCSM85	14.0	14.7	15.7	15.5	
May—Sep	GFDL45	14.0	14.2	14.0	14.6	
	GFDL85	14.0	14.3	14.1	14.6	
	HAD45	14.0	14.4	14.0	14.1	
	HAD85	14.0	14.3	14.1	14.6	

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
red maple	Acer rubrum	WDH	High	93.5	2728.7	17.2	Sm. dec.	Sm. dec.	High	Abundant	Good	Good			1	1
northern red oak	Quercus rubra	WDH	Medium	75.7	1078.9	8.4	No change	Sm. dec.	High	Abundant	Very Good	Good			1	2
sweet birch	Betula lenta	NDH	High	79.9	974.5	8.4	Sm. dec.	Sm. dec.	Low	Abundant	Fair	Fair			0	3
sugar maple	Acer saccharum	WDH	High	56.6	750.6	7.0	No change	No change	High	Abundant	Very Good	Very Good			1	4
eastern white pine	Pinus strobus	WDH	High	42.7	736.9	8.8	Sm. dec.	Sm. dec.	Low	Abundant	Fair	Fair			0	5
white ash	Fraxinus americana	WDL	Medium	62.9	679.9	6.9	No change	No change	Low	Abundant	Fair	Fair			0	6
black oak	Quercus velutina	WDH	High	58.2	588.5	6.5	Sm. inc.	Sm. inc.	Medium	Abundant	Very Good	Very Good			1	7
white oak	Quercus alba	WDH	Medium	55.5	548.0	6.3	Sm. inc.	Sm. inc.	High	Abundant	Very Good	Very Good			1	8
eastern hemlock	Tsuga canadensis	NSH	High	36.4	530.7	7.6	Sm. dec.	Sm. dec.	Low	Abundant	Fair	Fair			0	9
black cherry	Prunus serotina	WDL	Medium	48.2	389.3	4.3	Sm. inc.	Sm. inc.	Low	Common	Fair	Fair			1	10
scarlet oak	Quercus coccinea	WDL	Medium	36	358.4	6.0	Sm. inc.	Sm. inc.	Medium	Common	Good	Good			1	11
American beech	Fagus grandifolia	WDH	High	50.8	329.7	4.1	Sm. inc.	Sm. inc.	Medium	Common	Good	Good			1	12
yellow birch	Betula alleghaniensis	NDL	High	49.1	285.0	3.8	No change	No change	Medium	Common	Fair	Fair			1	13
pignut hickory	Carya glabra	WDL	Medium	40	199.8	3.1	Sm. inc.	Sm. inc.	Medium	Common	Good	Good			1	14
American elm	Ulmus americana	WDH	Medium	22.8	146.1	3.7	No change	Sm. inc.	Medium	Common	Fair	Good			1	15
eastern redcedar	Juniperus virginiana	WDH	Medium	18.6	133.4	5.1	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good			1	16
chestnut oak	Quercus prinus	NDH	High	19.3	131.5	4.2	Lg. inc.	Lg. inc.	High	Common	Very Good	Very Good			1	17
shagbark hickory	Carya ovata	WSL	Medium	28.1	119.7	2.3	Sm. inc.	Sm. inc.	Medium	Common	Good	Good			1	18
paper birch	Betula papyrifera	WDH	High	20.1	102.8	2.5	Lg. dec.	Lg. dec.	Medium	Common	Poor	Poor			0	19
yellow-poplar	Liriodendron tulipifera	WDH	High	14.9	80.2	3.9	Lg. inc.	Lg. inc.	High	Common	Very Good	Very Good			1	20
black locust	Robinia pseudoacacia	NDH	Low	3.5	78.8	8.5	No change	Sm. inc.	Medium	Rare	Poor	Fair	Infill +	Infill +	1	21
sassafras	Sassafras albidum	WSL	Low	16.9	61.3	2.0	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good			1	22
mockernut hickory	Carya alba	WDL	Medium	13.7	59.4	2.7	Lg. inc.	Lg. inc.	High	Common	Very Good	Very Good			1	23
American basswood	Tilia americana	WSL	Medium	7.6	55.4	2.0	No change	No change	Medium	Common	Fair	Fair			1	24
bigtooth aspen	Populus grandidentata	NSL	Medium	15.2	53.4	2.1	Sm. inc.	Sm. dec.	Medium	Common	Good	Poor			1	25
green ash	Fraxinus pennsylvanica	WSH	Low	5.7	50.7	4.0	No change	No change	Medium	Common	Fair	Fair	Infill +	Infill +	1	26
blackgum	Nyssa sylvatica	WDL	Medium	12.3	49.9	1.9	Lg. inc.	Lg. inc.	High	Rare	Good	Good			1	27
swamp white oak	Quercus bicolor	NSL	Low	8.6	49.8	4.5	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	28
slippery elm	Ulmus rubra	WSL	Low	3.2	45.5	10.5	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			2	29
bitternut hickory	Carya cordiformis	WSL	Low	10.6	40.7	3.2	Sm. inc.	Lg. inc.	High	Rare	Good	Good	Infill ++	Infill ++	1	30
quaking aspen	Populus tremuloides	WDH	High	11.9	40.3	2.6	Sm. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	31
red spruce	Picea rubens	NDH	High	6.2	39.2	3.0	Sm. dec.	Sm. dec.	Low	Rare	Very Poor	Very Poor			2	32
Norway maple	Acer platanoides	NSL	FIA	8.3	35.3	4.8	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	33
Norway spruce	Picea abies	NSH	FIA	3.9	34.8	3.7	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	34
Scots pine	Pinus sylvestris	NSH	FIA	1.9	33.2	2.5	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	35
American hornbeam; musclev	Carpinus caroliniana	WSL	Low	18.1	33.1	1.4	No change	Lg. inc.	Medium	Rare	Poor	Good			1	36
sycamore	Platanus occidentalis	NSL	Low	1.2	30.8	13.9	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	2	37
eastern hophornbeam; ironw	Ostrya virginiana	WSL	Low	16.6	27.6	0.8	Sm. inc.	Lg. inc.	High	Rare	Good	Good			1	38
pitch pine	Pinus rigida	NSH	High	3	27.2	2.5	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	39
black ash	Fraxinus nigra	WSH	Medium	3.5	24.1	4.2	Lg. dec.	Lg. dec.	Low	Rare	Very Poor	Very Poor			0	40
serviceberry	Amelanchier spp.	NSL	Low	10.2	23.4	1.2	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	41
boxelder	Acer negundo	WSH	Low	0.8	21.2	25.0	Sm. dec.	No change	High	Rare	Poor	Fair		Infill +	2	42
striped maple	Acer pensylvanicum	NSL	Medium	8.4	18.7	0.8	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	43
butternut	Juglans cinerea	NSLX	FIA	1.3	17.0	8.4	Unknown	Unknown	Low	Rare	FIA Only	FIA Only			0	44
gray birch	Betula populifolia	NSL	Low	9.8	14.3	1.1	No change	No change	Medium	Rare	Poor	Poor			1	45
balsam fir	Abies balsamea	NDH	High	2.3	12.1	1.2	Lg. dec.	Lg. dec.	Low	Rare	Very Poor	Very Poor			0	46
red pine	Pinus resinosa	NSH	Medium	1.7	11.5	6.8	Very Lg. dec.	Very Lg. dec.	Low	Rare	Lost	Lost			0	47

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eastern cottonwood	Populus deltoides	NSH	Low	2.2	10.1	1.9	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor				2	48
flowering dogwood	Cornus florida	WDL	Medium	8.2	6.5	0.9	No change	No change	Medium	Rare	Poor	Poor		Infill +		1	49
bur oak	Quercus macrocarpa	NDH	Medium	0.8	5.7	6.7	Sm. dec.	Sm. dec.	High	Rare	Poor	Poor				0	50
American chestnut	Castanea dentata	NSLX	FIA	4.6	4.5	0.6	Unknown	Unknown	Medium	Rare	FIA Only	FIA Only				0	51
Atlantic white-cedar	Chamaecyparis thyoides	NSH	Low	0.2	4.1	1.0	Sm. dec.	Sm. dec.	Low	Rare	Very Poor	Very Poor				0	52
tamarack (native)	Larix laricina	NSH	High	4	4.0	1.1	Lg. dec.	Lg. dec.	Low	Rare	Very Poor	Very Poor				0	53
pin cherry	Prunus pensylvanica	NSL	Low	2.3	3.7	1.4	Very Lg. dec.	Very Lg. dec.	Medium	Rare	Lost	Lost				0	54
bear oak; scrub oak	Quercus ilicifolia	NSLX	FIA	0.1	1.9	0.3	Unknown	Unknown	Medium	Rare	FIA Only	FIA Only				0	55
black willow	Salix nigra	NSH	Low	0.1	1.6	0.2	Lg. dec.	Sm. dec.	Low	Rare	Very Poor	Very Poor				0	56
sweetgum	Liquidambar styraciflua	WDH	High	0.5	1.4	1.0	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good				2	57
American mountain-ash	Sorbus americana	NSL	Low	0.6	0.8	0.6	Lg. dec.	Lg. dec.	Low	Rare	Very Poor	Very Poor				0	58
northern pin oak	Quercus ellipsoidalis	NSH	Medium	2.7	0.8	3.0	Sm. dec.	Sm. dec.	High	Rare	Poor	Poor				0	59
shellbark hickory	Carya laciniosa	NSL	Low	0.6	0.6	0.5	Very Lg. dec.	Very Lg. dec.	Medium	Rare	Lost	Lost				0	60
ailanthus	Ailanthus altissima	NSL	FIA	3.2	0.5	0.4	Unknown	Unknown	NA	Rare	NNIS	NNIS				0	61
pin oak	Quercus palustris	NSH	Low	2.7	0.3	1.1	Sm. inc.	Lg. inc.	Low	Rare	Poor	Fair	Infill +			2	62
white spruce	Picea glauca	NSL	Medium	0	0	0	Unknown	Unknown	Medium	Modeled	Unknown	Unknown				0	63
shortleaf pine	Pinus echinata	WDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +	Migrate ++		3	64
longleaf pine	Pinus palustris	NSH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat				0	65
loblolly pine	Pinus taeda	WDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate ++	Migrate ++		3	66
Virginia pine	Pinus virginiana	NDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate +		3	67
bald cypress	Taxodium distichum	NSH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat				3	68
silver maple	Acer saccharinum	NSH	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Likely +	Likely +		3	69
mountain maple	Acer spicatum	NSL	Low	0	0	0	Unknown	Unknown	High	Absent	Unknown	Unknown				0	70
cittamwood/gum bumelia	Sideroxylon lanuginosum ssp.	NSL	Low	0	0	0	Unknown	New Habitat	High	Absent	Unknown	New Habitat				0	71
black hickory	Carya texana	NDL	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat				0	72
sugarberry	Celtis laevigata	NDH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat				0	73
eastern redbud	Cercis canadensis	NSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +	Migrate +		3	74
American holly	Ilex opaca	NSL	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Likely +	Likely +		3	75
black walnut	Juglans nigra	WDH	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Likely +	Likely +		3	76
sweetbay	Magnolia virginiana	NSL	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate +		3	77
bigleaf magnolia	Magnolia macrophylla	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown				0	78
mountain or Fraser magnolia	Magnolia fraseri	NSL	Low	0	0	0	Unknown	Unknown	Low	Absent	Unknown	Unknown				0	79
water tupelo	Nyssa aquatica	NSH	Medium	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat				3	80
swamp tupelo	Nyssa biflora	NDH	Medium	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat				3	81
sourwood	Oxydendrum arboreum	NDL	High	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat		Migrate +		3	82
redbay	Persea borbonia	NSL	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat				3	83
southern red oak	Quercus falcata	WDL	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Migrate +	Migrate +		3	84
cherrybark oak; swamp red o.	Quercus pagoda	NSL	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate +		3	85
laurel oak	Quercus laurifolia	NDH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat				3	86
overcup oak	Quercus lyrata	NSL	Medium	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat				3	87
blackjack oak	Quercus marilandica	NSL	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat		Migrate +		3	88
chinkapin oak	Quercus muehlenbergii	NSL	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate +		3	89
water oak	Quercus nigra	WDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat				3	90
willow oak	Quercus phellos	NSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate +		3	91
post oak	Quercus stellata	WDH	High	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Migrate +	Migrate ++		3	92
winged elm	Ulmus alata	WDL	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat				3	93