

Current and Potential Future Habitat, Capability, and Migration

	sq. km	sq. mi	FIA Plots
Area of Region	8,000.0	3,088.8	315

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	18	14	Increase	16	17	Very Good	4	4	Likely	0	0
Hickory	0			Medium	19	28	No Change	3	3	Good	9	9	Infill	3	4
Maple	4	Abundant	7	Low	16	12	Decrease	11	10	Fair	9	9	Migrate	4	12
Oak	1	Common	13	FIA	1		New	20	21	Poor	3	4		7	16
Pine	3	Rare	11				Unknown	4	3	Very Poor	4	3			
Other	21	Absent	23					54	54	FIA Only	1	1			
	31		54							Unknown	3	2			
											33	32			

Potential Changes in Climate Variables

Temperature (°F)

Scenario	2009	2039	2069	2099		
Annual	CCSM45	40.2	42.0	44.4	44.5	
Average	CCSM85	40.2	42.7	45.4	48.9	
	GFDL45	40.2	43.0	46.9	48.4	
	GFDL85	40.2	43.7	48.4	53.7	
	HAD45	40.2	43.4	46.3	48.0	
	HAD85	40.2	43.6	47.7	53.4	
Growing Season	CCSM45	59.6	61.6	63.4	63.7	
	CCSM85	59.6	61.9	64.2	68.1	
May—Sep	GFDL45	59.6	62.9	66.6	68.3	
	GFDL85	59.6	63.3	67.9	73.3	
	HAD45	59.6	62.4	65.0	67.1	
	HAD85	59.6	62.2	66.6	72.6	
Coldest Month	CCSM45	9.9	11.5	13.4	13.7	
	CCSM85	9.9	12.7	14.3	16.8	
Average	GFDL45	9.9	12.5	15.8	17.0	
	GFDL85	9.9	13.7	16.9	20.1	
	HAD45	9.9	12.9	15.5	16.5	
	HAD85	9.9	14.6	17.3	21.0	
Warmest Month	CCSM45	66.2	68.3	69.5	69.5	
	CCSM85	66.2	68.7	70.5	72.3	
Average	GFDL45	66.2	69.3	71.1	72.4	
	GFDL85	66.2	69.2	72.3	74.9	
	HAD45	66.2	69.1	70.4	71.8	
	HAD85	66.2	69.0	71.5	75.5	

Precipitation (in)

Scenario	2009	2039	2069	2099		
Annual	CCSM45	44.1	43.2	43.2	47.8	
Total	CCSM85	44.1	45.9	45.1	46.8	
	GFDL45	44.1	48.5	51.2	50.0	
	GFDL85	44.1	48.1	49.9	51.1	
	HAD45	44.1	47.7	51.0	50.8	
	HAD85	44.1	47.9	49.0	52.9	
Growing Season	CCSM45	19.6	19.3	18.4	20.4	
Season	CCSM85	19.6	20.8	20.0	19.0	
May—Sep	GFDL45	19.6	19.3	19.4	18.9	
	GFDL85	19.6	20.1	19.6	18.2	
	HAD45	19.6	21.5	21.5	23.2	
	HAD85	19.6	20.4	21.4	23.8	

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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Katahdin Woods And Waters

National Park Climate Change Atlas Tree Species

USDA Forest Service
Northern Research Station
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Iverson, Peters, Prasad, Matthews

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Common Name	Scientific Name	Range	MR	%Cell	FIAsum	FIAiv	ChngCl45	ChngCl85	Adap	Abund	Capabil45	Capabil85	SHIFT45	SHIFT85	SSO	N
balsam fir	Abies balsamea	NDH	High	97.5	1805.2	18.5	Sm. dec.	Sm. dec.	Low	Abundant	Fair	Fair			0	1
red spruce	Picea rubens	NDH	High	98.8	1540.9	15.6	Sm. dec.	Lg. dec.	Low	Abundant	Fair	Poor			0	2
northern white-cedar	Thuja occidentalis	WSH	High	80	1032.8	12.9	Sm. dec.	Sm. dec.	Medium	Abundant	Fair	Fair			0	3
red maple	Acer rubrum	WDH	High	98.7	947.4	9.6	Sm. inc.	Sm. inc.	High	Abundant	Very Good	Very Good			1	4
American beech	Fagus grandifolia	WDH	High	78.8	761.9	9.7	No change	No change	Medium	Abundant	Good	Good			1	5
yellow birch	Betula alleghaniensis	NDL	High	96.2	650.5	6.8	Sm. dec.	Sm. dec.	Medium	Abundant	Fair	Fair			0	6
sugar maple	Acer saccharum	WDH	High	77.5	501.9	6.5	Lg. inc.	Lg. inc.	High	Abundant	Very Good	Very Good			1	7
paper birch	Betula papyrifera	WDH	High	86.2	495.8	5.8	No change	No change	Medium	Common	Fair	Fair			1	8
eastern hemlock	Tsuga canadensis	NSH	High	56.2	477.4	8.5	Sm. inc.	Sm. inc.	Low	Common	Fair	Fair			1	9
eastern white pine	Pinus strobus	WDH	High	66.3	409.3	6.2	Lg. inc.	Sm. inc.	Low	Common	Good	Fair			1	10
black spruce	Picea mariana	NSH	High	40	223.6	5.6	No change	No change	Medium	Common	Fair	Fair			1	11
quaking aspen	Populus tremuloides	WDH	High	45	186.8	4.2	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good			1	12
striped maple	Acer pensylvanicum	NSL	Medium	78.8	168.8	2.1	Sm. dec.	Lg. dec.	Medium	Common	Poor	Poor			0	13
white spruce	Picea glauca	NSL	Medium	62.5	162.6	2.6	Sm. inc.	Sm. inc.	Medium	Common	Good	Good			1	14
white ash	Fraxinus americana	WDL	Medium	51.3	154.0	3.0	Lg. inc.	Lg. inc.	Low	Common	Good	Good			1	15
bigtooth aspen	Populus grandidentata	NSL	Medium	37.5	131.6	3.5	Sm. inc.	Sm. inc.	Medium	Common	Good	Good			1	16
eastern hophornbeam; ironw	Ostrya virginiana	WSL	Low	38.8	71.5	1.8	Lg. inc.	Lg. inc.	High	Common	Very Good	Very Good			1	17
tamarack (native)	Larix laricina	NSH	High	17.5	66.0	3.8	Sm. inc.	Lg. inc.	Low	Common	Fair	Good			1	18
gray birch	Betula populifolia	NSL	Low	11.2	61.5	5.5	Sm. inc.	Sm. inc.	Medium	Common	Good	Good			1	19
black ash	Fraxinus nigra	WSH	Medium	30	54.4	1.8	Lg. inc.	Lg. inc.	Low	Common	Good	Good			1	20
pin cherry	Prunus pensylvanica	NSL	Low	27.5	23.7	0.9	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	21
red pine	Pinus resinosa	NSH	Medium	7.5	16.7	2.2	Sm. inc.	Sm. inc.	Low	Rare	Poor	Poor	Infill +	Infill +	2	22
balsam poplar	Populus balsamifera	NSH	Medium	8.8	16.4	1.9	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	23
American elm	Ulmus americana	WDH	Medium	8.8	10.2	1.2	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good	Infill ++	Infill ++	2	24
mountain maple	Acer spicatum	NSL	Low	16.2	9.0	0.6	Very Lg. dec.	Very Lg. dec.	High	Rare	Lost	Lost			0	25
jack pine	Pinus banksiana	NSH	Medium	1.2	6.1	4.9	Sm. dec.	Lg. dec.	High	Rare	Poor	Poor			0	26
black cherry	Prunus serotina	WDL	Medium	5	4.5	0.9	Lg. inc.	Lg. inc.	Low	Rare	Fair	Fair	Infill +	Infill +	1	27
American mountain-ash	Sorbus americana	NSL	Low	6.2	3.7	0.6	Sm. dec.	Sm. dec.	Low	Rare	Very Poor	Very Poor			0	28
serviceberry	Amelanchier spp.	NSL	Low	6.2	2.6	0.4	Sm. dec.	Sm. inc.	Medium	Rare	Very Poor	Fair		Infill +	1	29
chokecherry	Prunus virginiana	NSLX	FIA	2.5	2.4	1.0	Unknown	Unknown	Medium	Rare	FIA Only	FIA Only			0	30
northern red oak	Quercus rubra	WDH	Medium	1.2	0.9	0.8	Lg. inc.	Lg. inc.	High	Rare	Good	Good			2	31
eastern redcedar	Juniperus virginiana	WDH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	32
pitch pine	Pinus rigida	NSH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate +	3	33
black maple	Acer nigrum	NSH	Low	0	0	0	Unknown	Unknown	High	Absent	Unknown	Unknown			0	34
sweet birch	Betula lenta	NDH	High	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	35
American hornbeam; muscle	Carpinus caroliniana	WSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate +	3	36
bitternut hickory	Carya cordiformis	WSL	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat		Migrate +	3	37
pignut hickory	Carya glabra	WDL	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate +	3	38
pecan	Carya illinoensis	NSH	Low	0	0	0	Unknown	Unknown	Low	Absent	Unknown	Unknown			0	39
shagbark hickory	Carya ovata	WSL	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	40
mockernut hickory	Carya alba	WDL	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat			3	41
common persimmon	Diospyros virginiana	NSL	Low	0	0	0	Unknown	New Habitat	High	Absent	Unknown	New Habitat			0	42
green ash	Fraxinus pennsylvanica	WSH	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate +	3	43
black walnut	Juglans nigra	WDH	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	44
yellow-poplar	Liriodendron tulipifera	WDH	High	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat			3	45
blackgum	Nyssa sylvatica	WDL	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat			3	46
sycamore	Platanus occidentalis	NSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			0	47



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white oak	Quercus alba	WDH	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Migrate +	Migrate ++	3	48
swamp white oak	Quercus bicolor	NSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat				49
scarlet oak	Quercus coccinea	WDL	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate +		50
chestnut oak	Quercus prinus	NDH	High	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat				51
black oak	Quercus velutina	WDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +	Migrate ++		52
black locust	Robinia pseudoacacia	NDH	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate +		53
American basswood	Tilia americana	WSL	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate +		54