

HUC 041504 Lake Champlain-Richelieu River

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

Common Name	Scientific Name	Range	MR	%Cell	FIAsum	FIAiv	ChngCl45	ChngCl85	Adap	Abund	Capabil45	Capabil85	SHIFT45	SHIFT85	SSO	N
sugar maple	Acer saccharum	WDH	High	83.4	1453.8	14.9	Sm. dec.	Sm. dec.	High	Abundant	Good	Good			1	1
red maple	Acer rubrum	WDH	High	85	909.7	10.1	Sm. inc.	Sm. inc.	High	Abundant	Very Good	Very Good			1	2
eastern hemlock	Tsuga canadensis	NSH	High	60.1	729.4	12.1	No change	Sm. dec.	Low	Abundant	Fair	Fair			0	3
American beech	Fagus grandifolia	WDH	High	75	659.1	7.3	No change	Sm. dec.	Medium	Abundant	Good	Fair			1	4
eastern white pine	Pinus strobus	WDH	High	56.7	596.9	10.6	Sm. inc.	No change	Low	Abundant	Good	Fair			1	5
balsam fir	Abies balsamea	NDH	High	45.4	565.0	9.0	Sm. dec.	Sm. dec.	Low	Abundant	Fair	Fair			0	6
yellow birch	Betula alleghaniensis	NDL	High	69.6	521.9	5.9	Sm. dec.	Sm. dec.	Medium	Abundant	Fair	Fair			0	7
white ash	Fraxinus americana	WDL	Medium	75.3	431.7	5.7	Sm. inc.	Sm. inc.	Low	Common	Fair	Fair			1	8
paper birch	Betula papyrifera	WDH	High	68.1	394.2	5.0	No change	Sm. dec.	Medium	Common	Fair	Poor			1	9
red spruce	Picea rubens	NDH	High	49	345.7	4.9	Sm. dec.	Sm. dec.	Low	Common	Poor	Poor			0	10
northern red oak	Quercus rubra	WDH	Medium	37.6	223.4	6.1	Lg. inc.	Lg. inc.	High	Common	Very Good	Very Good			1	11
northern white-cedar	Thuja occidentalis	WSH	High	23.8	211.3	8.1	Sm. dec.	Sm. dec.	Medium	Common	Poor	Poor			0	12
American elm	Ulmus americana	WDH	Medium	41.8	207.0	5.7	No change	No change	Medium	Common	Fair	Fair			1	13
quaking aspen	Populus tremuloides	WDH	High	40.8	169.0	4.0	Sm. inc.	Sm. inc.	Medium	Common	Good	Good			1	14
black cherry	Prunus serotina	WDL	Medium	51.4	168.1	3.0	Lg. inc.	Lg. inc.	Low	Common	Good	Good			1	15
eastern hophornbeam; ironw	Ostrya virginiana	WSL	Low	51.6	147.9	3.1	No change	No change	High	Common	Good	Good			1	16
sweet birch	Betula lenta	NDH	High	19.1	86.9	4.2	Lg. inc.	Lg. inc.	Low	Common	Good	Good	Infill ++	Infill ++	1	17
striped maple	Acer pensylvanicum	NSL	Medium	40.5	81.9	1.5	Sm. dec.	Sm. dec.	Medium	Common	Poor	Poor			0	18
American basswood	Tilia americana	WSL	Medium	27.3	70.2	2.4	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good			1	19
bigtooth aspen	Populus grandidentata	NSL	Medium	21.4	67.6	3.0	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good			1	20
red pine	Pinus resinosa	NSH	Medium	8.9	65.8	7.1	No change	No change	Low	Common	Poor	Poor	Infill +	Infill +	2	21
black ash	Fraxinus nigra	WSH	Medium	17.3	65.5	3.7	Lg. dec.	Lg. dec.	Low	Common	Very Poor	Very Poor			0	22
shagbark hickory	Carya ovata	WSL	Medium	9.2	62.4	6.7	No change	No change	Medium	Common	Fair	Fair	Infill +	Infill +	1	23
gray birch	Betula populifolia	NSL	Low	20.5	54.5	2.8	Lg. dec.	Sm. dec.	Medium	Common	Poor	Poor			0	24
boxelder	Acer negundo	WSH	Low	2	48.1	28.6	Sm. dec.	No change	High	Rare	Poor	Fair	Infill +	Infill +	2	25
bitternut hickory	Carya cordiformis	WSL	Low	16.7	42.8	3.0	Sm. inc.	Lg. inc.	High	Rare	Good	Good	Infill ++	Infill ++	1	26
bur oak	Quercus macrocarpa	NDH	Medium	4.5	42.4	16.6	Sm. dec.	Sm. dec.	High	Rare	Poor	Poor	Infill +	Infill +	2	27
pin cherry	Prunus pensylvanica	NSL	Low	16.6	38.3	2.1	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	28
black locust	Robinia pseudoacacia	NDH	Low	5.9	35.2	10.8	Sm. inc.	Lg. inc.	Medium	Rare	Fair	Good	Infill +	Infill ++	1	29
green ash	Fraxinus pennsylvanica	WSH	Low	9	34.0	4.8	No change	Sm. inc.	Medium	Rare	Poor	Fair	Infill +	Infill +	1	30
white spruce	Picea glauca	NSL	Medium	5.5	32.6	2.7	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	1	31
Norway spruce	Picea abies	NSH	FIA	4.3	25.4	4.9	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	32
silver maple	Acer saccharinum	NSH	Low	1	24.3	13.3	No change	No change	High	Rare	Fair	Fair	Infill +	Infill +	2	33
eastern redcedar	Juniperus virginiana	WDH	Medium	3.5	21.8	7.4	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good	Infill ++	Infill ++	2	34
black spruce	Picea mariana	NSH	High	1.8	21.6	4.4	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			2	35
eastern cottonwood	Populus deltoides	NSH	Low	2	19.9	11.8	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	2	36
butternut	Juglans cinerea	NSLX	FIA	5.2	17.8	3.8	Unknown	Unknown	Low	Rare	FIA Only	FIA Only			0	37
tamarack (native)	Larix laricina	NSH	High	5	17.7	1.7	Sm. dec.	Sm. dec.	Low	Rare	Very Poor	Very Poor			2	38
slippery elm	Ulmus rubra	WSL	Low	1.5	15.8	12.5	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	2	39
balsam poplar	Populus balsamifera	NSH	Medium	5.1	15.3	3.1	Very Lg. dec.	Very Lg. dec.	Medium	Rare	Lost	Lost			0	40
white oak	Quercus alba	WDH	Medium	6.4	12.8	2.3	Lg. inc.	Lg. inc.	High	Rare	Good	Good	Infill ++	Infill ++	2	41
serviceberry	Amelanchier spp.	NSL	Low	15.5	12.4	0.9	Sm. inc.	Sm. inc.	Medium	Rare	Fair	Fair			1	42
chestnut oak	Quercus prinus	NDH	High	2.9	8.0	2.9	Lg. inc.	Lg. inc.	High	Rare	Good	Good			2	43
mountain maple	Acer spicatum	NSL	Low	12.2	7.6	0.5	Lg. dec.	Lg. dec.	High	Rare	Poor	Poor			1	44
American hornbeam; musclev	Carpinus caroliniana	WSL	Low	7.6	6.6	1.3	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	1	45
Scots pine	Pinus sylvestris	NSH	FIA	2.1	6.5	2.7	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	46
American mountain-ash	Sorbus americana	NSL	Low	4.5	5.8	0.8	Sm. dec.	Sm. dec.	Low	Rare	Very Poor	Very Poor			0	47



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swamp white oak	Quercus bicolor	NSL	Low	2.7	5.7	3.2	Sm. inc.	Lg. inc.	Medium	Rare	Fair	Good	Infill +		2	48
black oak	Quercus velutina	WDH	High	0.9	4.9	5.8	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			2	49
jack pine	Pinus banksiana	NSH	Medium	0.5	4.5	10.8	Sm. dec.	Sm. dec.	High	Rare	Poor	Poor			0	50
black walnut	Juglans nigra	WDH	Low	0.5	4.3	10.2	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			2	51
pitch pine	Pinus rigida	NSH	High	0.5	3.6	8.7	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			2	52
pignut hickory	Carya glabra	WDL	Medium	1.3	1.3	1.0	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good			2	53
chokecherry	Prunus virginiana	NSLX	FIA	2	1.0	0.6	Unknown	Unknown	Medium	Rare	FIA Only	FIA Only			0	54
rock elm	Ulmus thomasii	NSLX	FIA	0.3	0.4	0.5	Unknown	Unknown	Low	Rare	FIA Only	FIA Only			0	55
Atlantic white-cedar	Chamaecyparis thyoides	NSH	Low	0.5	0.3	0.7	Sm. dec.	Lg. dec.	Low	Rare	Very Poor	Very Poor			0	56
black willow	Salix nigra	NSH	Low	0.5	0.1	0.3	No change	Lg. inc.	Low	Rare	Very Poor	Fair	Infill +		2	57
Table Mountain pine	Pinus pungens	NSL	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat			3	58
Virginia pine	Pinus virginiana	NDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +		3	59
bald cypress	Taxodium distichum	NSH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			0	60
pawpaw	Asimina triloba	NSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	61
cittamwood/gum bumelia	Sideroxylon lanuginosum ssp.	NSL	Low	0	0	0	Unknown	New Habitat	High	Absent	Unknown	New Habitat			0	62
water hickory	Carya aquatica	NSL	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			0	63
pecan	Carya illinoensis	NSH	Low	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat			0	64
shellbark hickory	Carya laciniosa	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	65
black hickory	Carya texana	NDL	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			0	66
mockernut hickory	Carya alba	WDL	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	67
sugarberry	Celtis laevigata	NDH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			0	68
hackberry	Celtis occidentalis	WDH	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	69
eastern redbud	Cercis canadensis	NSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate +	3	70
flowering dogwood	Cornus florida	WDL	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Likely +	Likely +	3	71
common persimmon	Diospyros virginiana	NSL	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat			3	72
honeylocust	Gleditsia triacanthos	NSH	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat			3	73
sweetgum	Liquidambar styraciflua	WDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate ++	3	74
yellow-poplar	Liriodendron tulipifera	WDH	High	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Likely +	Likely +	3	75
Osage-orange	Maclura pomifera	NDH	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat		Migrate +	3	76
cucumber tree	Magnolia acuminata	NSL	Low	0	0	0	Unknown	New Habitat	Medium	Absent	Unknown	New Habitat		Migrate +	3	77
southern magnolia	Magnolia grandiflora	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	78
bigleaf magnolia	Magnolia macrophylla	NSL	Low	0	0	0	Unknown	Unknown	Medium	Absent	Unknown	Unknown			0	79
mountain or Fraser magnolia	Magnolia fraseri	NSL	Low	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat			0	80
blackgum	Nyssa sylvatica	WDL	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	81
sourwood	Oxydendrum arboreum	NDL	High	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat			0	82
sycamore	Platanus occidentalis	NSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	83
scarlet oak	Quercus coccinea	WDL	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Likely +	Likely +	3	84
northern pin oak	Quercus ellipsoidalis	NSH	Medium	0	0	0	Unknown	New Habitat	High	Absent	Unknown	New Habitat			3	85
shingle oak	Quercus imbricaria	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			0	87
blackjack oak	Quercus marilandica	NSL	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat			3	88
chinkapin oak	Quercus muehlenbergii	NSL	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	89
pin oak	Quercus palustris	NSH	Low	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	90
willow oak	Quercus phellos	NSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	91
Shumard oak	Quercus shumardii	NSL	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat			0	92
post oak	Quercus stellata	WDH	High	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat			3	93
sassafras	Sassafras albidum	WSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Likely +	Likely +	3	94



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winged elm	Ulmus alata	WDL	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			0	95