

Effigy Mounds

National Park

Climate Change Atlas Tree Species

Current and Potential Future Habitat, Capability, and Migration

Landscape Change Research Group
Iverson, Peters, Prasad, Matthews
USFS Northern Research Station
Delaware, OH

Common Name	Scientific Name	Range	MR	%Cell	FIAsum	FIAiv	ChngCl45	ChngCl85	Adap	Abund	Capabil45	Capabil85	SHIFT45	SHIFT85	SSO	N
American elm	Ulmus americana	WDH	Medium	86	864.69	15.57	Sm. dec.	Sm. dec.	Medium	Abundant	Fair	Fair			0	1
black walnut	Juglans nigra	WDH	Low	67.7	386.43	10.61	No change	No change	Medium	Common	Fair	Fair			1	2
sugar maple	Acer saccharum	WDH	High	58.1	380.76	9.68	No change	No change	High	Common	Good	Good			1	3
white oak	Quercus alba	WDH	Medium	54.8	378.73	10.08	Sm. inc.	No change	High	Common	Very Good	Good			1	4
northern red oak	Quercus rubra	WDH	Medium	50.5	370.13	9.58	No change	Sm. dec.	High	Common	Good	Fair			1	5
boxelder	Acer negundo	WSH	Low	57	291.42	8.06	Sm. inc.	No change	High	Common	Very Good	Good			1	6
shagbark hickory	Carya ovata	WSL	Medium	64.5	284.45	7.55	No change	Sm. dec.	Medium	Common	Fair	Poor			1	7
slippery elm	Ulmus rubra	WSL	Low	67.7	283.45	6.19	Sm. dec.	Sm. dec.	Medium	Common	Poor	Poor			0	8
American basswood	Tilia americana	WSL	Medium	57	276.48	8.15	No change	Sm. dec.	Medium	Common	Fair	Poor			1	9
bitternut hickory	Carya cordiformis	WSL	Low	73.1	258.25	5.63	No change	No change	High	Common	Good	Good			1	10
bur oak	Quercus macrocarpa	NDH	Medium	39.8	256.51	8.29	Sm. inc.	Sm. inc.	High	Common	Very Good	Very Good			1	11
silver maple	Acer saccharinum	NSH	Low	11.8	239.11	20.21	No change	No change	High	Common	Good	Good			1	12
white ash	Fraxinus americana	WDL	Medium	47.3	212.83	6.39	No change	No change	Low	Common	Poor	Poor			0	13
black cherry	Prunus serotina	WDL	Medium	69.9	168.53	4.48	Sm. inc.	Sm. inc.	Low	Common	Fair	Fair			1	14
eastern hophornbeam; ironw	Ostrya virginiana	WSL	Low	61.3	155.16	4.1	No change	No change	High	Common	Good	Good			1	15
green ash	Fraxinus pennsylvanica	WSH	Low	12.9	119.68	9.28	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good			1	16
eastern redcedar	Juniperus virginiana	WDH	Medium	28	118.35	6.16	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good			1	17
bigtooth aspen	Populus grandidentata	NSL	Medium	17.2	103.73	7.71	Lg. dec.	Lg. dec.	Medium	Common	Poor	Poor			0	18
black maple	Acer nigrum	NSH	Low	9.7	100.42	16.99	Sm. dec.	Lg. dec.	High	Common	Fair	Fair			0	19
black oak	Quercus velutina	WDH	High	29	97.3	5.56	Lg. inc.	Lg. inc.	Medium	Common	Very Good	Very Good			1	20
red mulberry	Morus rubra	NSL	Low	9.7	78.61	8.12	No change	No change	Medium	Common	Fair	Fair			1	21
hackberry	Celtis occidentalis	WDH	Medium	40.9	72.74	3.25	Lg. inc.	Lg. inc.	High	Common	Very Good	Very Good			1	22
quaking aspen	Populus tremuloides	WDH	High	15.1	56.1	4.91	Lg. dec.	Lg. dec.	Medium	Common	Poor	Poor	Infill +	Infill +	0	23
chinkapin oak	Quercus muehlenbergii	NSL	Medium	5.4	45.27	8.42	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	2	24
black ash	Fraxinus nigra	WSH	Medium	29	40.66	2.44	Lg. dec.	Very Lg. dec.	Low	Rare	Very Poor	Lost			0	25
swamp white oak	Quercus bicolor	NSL	Low	5.4	37.69	7.01	No change	No change	Medium	Rare	Poor	Poor	Infill +	Infill +	2	26
white mulberry	Morus alba	NSL	FIA	7.5	34.84	4.63	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	27
wild plum	Prunus americana	NSLX	FIA	7.5	32.3	7.71	Unknown	Unknown	Medium	Rare	FIA Only	FIA Only			0	28
eastern cottonwood	Populus deltoides	NSH	Low	10.8	24.42	4.02	Lg. inc.	Lg. inc.	Medium	Rare	Good	Good	Infill ++	Infill ++	1	29
paper birch	Betula papyrifera	WDH	High	11.8	23.56	3.16	Lg. dec.	Lg. dec.	Medium	Rare	Very Poor	Very Poor			0	30
American hornbeam; muscle	Carpinus caroliniana	WSL	Low	9.7	19.56	3.19	Sm. dec.	Sm. dec.	Medium	Rare	Very Poor	Very Poor			0	31
black locust	Robinia pseudoacacia	NDH	Low	3.2	19.3	5.98	Sm. inc.	Lg. inc.	Medium	Rare	Fair	Good	Infill +	Infill ++	1	32
northern pin oak	Quercus ellipsoidalis	NSH	Medium	6.5	11.17	4.77	Very Lg. dec.	Very Lg. dec.	High	Rare	Lost	Lost			0	33
eastern white pine	Pinus strobus	WDH	High	6.5	10.25	3.68	Sm. dec.	Lg. dec.	Low	Rare	Very Poor	Very Poor			2	34
Siberian elm	Ulmus pumila	NDH	FIA	5.4	9.22	15.52	Unknown	Unknown	NA	Rare	NNIS	NNIS			0	35
honeylocust	Gleditsia triacanthos	NSH	Low	2.2	8.8	4.09	Lg. inc.	Lg. inc.	High	Rare	Good	Good	Infill ++	Infill ++	2	36
butternut	Juglans cinerea	NSLX	FIA	7.5	4.91	1.42	Unknown	Unknown	Low	Rare	FIA Only	FIA Only			0	37
red maple	Acer rubrum	WDH	High	3.2	3.24	1	Sm. inc.	Sm. inc.	High	Rare	Good	Good	Infill ++	Infill ++	2	38
red pine	Pinus resinosa	NSH	Medium	2.2	2.63	1.23	Very Lg. dec.	Very Lg. dec.	Low	Rare	Lost	Lost			0	39
jack pine	Pinus banksiana	NSH	Medium	1.1	0.54	0.5	Lg. dec.	Lg. dec.	High	Rare	Poor	Poor			0	40
chokecherry	Prunus virginiana	NSLX	FIA	4.3	0.32	1.2	Unknown	Unknown	Medium	Rare	FIA Only	FIA Only			0	41
mountain maple	Acer spicatum	NSL	Low	0	0	0	Unknown	Unknown	High	Absent	Unknown	Unknown			0	42
Ohio buckeye	Aesculus glabra	NSL	Low	0	0	0	Unknown	Unknown	Medium	Modeled	Unknown	Unknown			0	43
gray birch	Betula populifolia	NSL	Low	0	0	0	Unknown	Unknown	Medium	Modeled	Unknown	Unknown			0	44
pignut hickory	Carya glabra	WDL	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate +	3	45
pecan	Carya illinoensis	NSH	Low	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat			3	46
black hickory	Carya texana	NDL	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	47
mockernut hickory	Carya alba	WDL	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	48
sugarberry	Celtis laevigata	NDH	Medium	0	0	0	Unknown	New Habitat	Medium	Absent	Unknown	New Habitat			3	49
eastern redbud	Cercis canadensis	NSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	50
flowering dogwood	Cornus florida	WDL	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat			3	51
common persimmon	Diospyros virginiana	NSL	Low	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat		Migrate +	3	52
American beech	Fagus grandifolia	WDH	High	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate +	3	53

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blue ash	<i>Fraxinus quadrangulata</i>	NSL	Low	0	0	0	Unknown	Unknown	Low	Absent	Unknown	Unknown			0	54
yellow-poplar	<i>Liriodendron tulipifera</i>	WDH	High	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat		Migrate +	3	55
Osage-orange	<i>Maclura pomifera</i>	NDH	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	56
sycamore	<i>Platanus occidentalis</i>	NSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	57
shingle oak	<i>Quercus imbricaria</i>	NDH	Medium	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat	Migrate +	Migrate +	3	58
blackjack oak	<i>Quercus marilandica</i>	NSL	Medium	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat		Migrate ++	3	59
post oak	<i>Quercus stellata</i>	WDH	High	0	0	0	New Habitat	New Habitat	High	Absent	New Habitat	New Habitat	Migrate +	Migrate ++	3	60
black willow	<i>Salix nigra</i>	NSH	Low	0	0	0	New Habitat	New Habitat	Low	Absent	New Habitat	New Habitat	Likely +	Likely +	3	61
sassafras	<i>Sassafras albidum</i>	WSL	Low	0	0	0	New Habitat	New Habitat	Medium	Absent	New Habitat	New Habitat		Migrate +	3	62