

Apostle Islands

National Park

Climate Change Atlas Tree Species

Current and Potential Future Habitat, Capability, and Migration

Landscape Change Research Group
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| Common Name | Scientific Name | Range | MR | %Cell | FIAsum | FIAiv | ChngCl45 | ChngCl85 | Adap | Abund | Capabil45 | Capabil85 | SHIFT45 | SHIFT85 | SSO | N |
|----------------------------|-------------------------|-------|--------|-------|---------|-------|---------------|---------------|--------|----------|-------------|-------------|-----------|------------|-----|----|
| quaking aspen | Populus tremuloides | WDH | High | 94.7 | 1992.96 | 16.65 | Sm. dec. | Lg. dec. | Medium | Abundant | Fair | Fair | | | 0 | 1 |
| sugar maple | Acer saccharum | WDH | High | 81.3 | 1487.88 | 14.64 | No change | No change | High | Abundant | Very Good | Very Good | | | 1 | 2 |
| red maple | Acer rubrum | WDH | High | 94.2 | 1158.37 | 10.24 | No change | No change | High | Abundant | Very Good | Very Good | | | 1 | 3 |
| paper birch | Betula papyrifera | WDH | High | 77.8 | 1053.64 | 7.62 | Lg. dec. | Lg. dec. | Medium | Abundant | Fair | Fair | | | 0 | 4 |
| balsam fir | Abies balsamea | NDH | High | 90.7 | 856.24 | 7.77 | Lg. dec. | Lg. dec. | Low | Abundant | Poor | Poor | | | 0 | 5 |
| black ash | Fraxinus nigra | WSH | Medium | 79.5 | 644.67 | 6.62 | Sm. dec. | Sm. dec. | Low | Abundant | Fair | Fair | | | 0 | 6 |
| red pine | Pinus resinosa | NSH | Medium | 37.6 | 419.95 | 10.13 | Sm. dec. | Sm. dec. | Low | Common | Poor | Poor | | | 0 | 7 |
| northern white-cedar | Thuja occidentalis | WSH | High | 50.4 | 405.12 | 6.5 | No change | No change | Medium | Common | Fair | Fair | | | 1 | 8 |
| northern red oak | Quercus rubra | WDH | Medium | 58.1 | 327.54 | 4.64 | Lg. inc. | Lg. inc. | High | Common | Very Good | Very Good | | | 1 | 9 |
| bigtooth aspen | Populus grandidentata | NSL | Medium | 44.1 | 305.66 | 5.93 | No change | No change | Medium | Common | Fair | Fair | | | 1 | 10 |
| yellow birch | Betula alleghaniensis | NDL | High | 62.5 | 291.95 | 3.82 | Sm. dec. | Sm. dec. | Medium | Common | Poor | Poor | | | 0 | 11 |
| American basswood | Tilia americana | WSL | Medium | 56.9 | 269.75 | 4 | Sm. inc. | Sm. inc. | Medium | Common | Good | Good | | | 1 | 12 |
| white spruce | Picea glauca | NSL | Medium | 67.4 | 269.29 | 2.59 | Sm. dec. | Sm. dec. | Medium | Common | Poor | Poor | | | 0 | 13 |
| eastern hemlock | Tsuga canadensis | NSH | High | 38.3 | 227.79 | 5.15 | Sm. inc. | No change | Low | Common | Fair | Poor | | | 1 | 14 |
| eastern white pine | Pinus strobus | WDH | High | 46 | 213.51 | 4.24 | Lg. inc. | Lg. inc. | Low | Common | Good | Good | | | 1 | 15 |
| jack pine | Pinus banksiana | NSH | Medium | 15 | 130.79 | 8.72 | Sm. dec. | Sm. dec. | High | Common | Fair | Fair | | | 1 | 16 |
| black spruce | Picea mariana | NSH | High | 32.3 | 122 | 3.61 | Lg. dec. | Lg. dec. | Medium | Common | Poor | Poor | | | 0 | 17 |
| northern pin oak | Quercus ellipsoidalis | NSH | Medium | 19 | 97.74 | 4.86 | Lg. inc. | Sm. inc. | High | Common | Very Good | Very Good | Infill ++ | Infill ++ | 1 | 18 |
| eastern hophornbeam; ironw | Ostrya virginiana | WSL | Low | 51.6 | 96 | 1.53 | Lg. inc. | Lg. inc. | High | Common | Very Good | Very Good | | | 1 | 19 |
| black cherry | Prunus serotina | WDL | Medium | 46.8 | 80.65 | 1.68 | Lg. inc. | Lg. inc. | Low | Common | Good | Good | | | 1 | 20 |
| white ash | Fraxinus americana | WDL | Medium | 33.7 | 79.11 | 1.76 | Lg. inc. | Lg. inc. | Low | Common | Good | Good | | | 1 | 21 |
| tamarack (native) | Larix laricina | NSH | High | 17.5 | 73.44 | 4.2 | Sm. inc. | Sm. inc. | Low | Common | Fair | Fair | | | 1 | 22 |
| American elm | Ulmus americana | WDH | Medium | 31.6 | 62.89 | 1.91 | Lg. inc. | Lg. inc. | Medium | Common | Very Good | Very Good | | | 1 | 23 |
| balsam poplar | Populus balsamifera | NSH | Medium | 20.6 | 47.52 | 1.95 | Lg. dec. | Lg. dec. | Medium | Rare | Very Poor | Very Poor | | | 0 | 24 |
| green ash | Fraxinus pennsylvanica | WSH | Low | 31.2 | 46.76 | 1.13 | Lg. inc. | Lg. inc. | Medium | Rare | Good | Good | | | 1 | 25 |
| serviceberry | Amelanchier spp. | NSL | Low | 31.1 | 29.77 | 0.7 | Lg. dec. | Lg. dec. | Medium | Rare | Very Poor | Very Poor | | | 0 | 26 |
| mountain maple | Acer spicatum | NSL | Low | 14 | 20.45 | 1.04 | Lg. dec. | Lg. dec. | High | Rare | Poor | Poor | | | 1 | 27 |
| chokecherry | Prunus virginiana | NSLX | FIA | 26.5 | 18.25 | 0.65 | Unknown | Unknown | Medium | Rare | FIA Only | FIA Only | | | 0 | 28 |
| pin cherry | Prunus pensylvanica | NSL | Low | 10.9 | 7.56 | 0.67 | Lg. dec. | Very Lg. dec. | Medium | Rare | Very Poor | Lost | | | 0 | 29 |
| bur oak | Quercus macrocarpa | NDH | Medium | 8.6 | 6.8 | 0.75 | Lg. inc. | Lg. inc. | High | Rare | Good | Good | Infill ++ | Infill ++ | 2 | 30 |
| Norway spruce | Picea abies | NSH | FIA | 1.2 | 5.46 | 4.37 | Unknown | Unknown | NA | Rare | NNIS | NNIS | | | 0 | 31 |
| American hornbeam; muscle | Carpinus caroliniana | WSL | Low | 3.7 | 3.87 | 1.03 | No change | No change | Medium | Rare | Poor | Poor | | Infill + | 1 | 32 |
| black willow | Salix nigra | NSH | Low | 3.7 | 3.46 | 0.92 | No change | Sm. inc. | Low | Rare | Very Poor | Poor | | Infill + | 2 | 33 |
| American mountain-ash | Sorbus americana | NSL | Low | 2.5 | 2.64 | 1.05 | Very Lg. dec. | Very Lg. dec. | Low | Rare | Lost | Lost | | | 0 | 34 |
| peachleaf willow | Salix amygdaloides | NSLX | FIA | 2.5 | 1.2 | 0.48 | Unknown | Unknown | Medium | Rare | FIA Only | FIA Only | | | 0 | 35 |
| silver maple | Acer saccharinum | NSH | Low | 1.2 | 0.37 | 0.3 | Lg. inc. | Lg. inc. | High | Rare | Good | Good | | | 2 | 36 |
| wild plum | Prunus americana | NSLX | FIA | 0.9 | 0.25 | 0.15 | Unknown | Unknown | Medium | Rare | FIA Only | FIA Only | | | 0 | 37 |
| eastern redcedar | Juniperus virginiana | WDH | Medium | 0 | 0 | 0 | New Habitat | New Habitat | Medium | Absent | New Habitat | New Habitat | Migrate + | Migrate ++ | 3 | 38 |
| red spruce | Picea rubens | NDH | High | 0 | 0 | 0 | New Habitat | New Habitat | Low | Absent | New Habitat | New Habitat | | | 0 | 39 |
| boxelder | Acer negundo | WSH | Low | 0 | 0 | 0 | New Habitat | New Habitat | High | Absent | New Habitat | New Habitat | Migrate + | Migrate + | 3 | 40 |
| black maple | Acer nigrum | NSH | Low | 0 | 0 | 0 | Unknown | Unknown | High | Modeled | Unknown | Unknown | | | 0 | 41 |
| pawpaw | Asimina triloba | NSL | Low | 0 | 0 | 0 | Unknown | Unknown | Medium | Absent | Unknown | Unknown | | | 0 | 42 |
| sweet birch | Betula lenta | NDH | High | 0 | 0 | 0 | New Habitat | New Habitat | Low | Absent | New Habitat | New Habitat | | | 0 | 43 |
| bitternut hickory | Carya cordiformis | WSL | Low | 0 | 0 | 0 | New Habitat | New Habitat | High | Absent | New Habitat | New Habitat | Migrate + | Migrate + | 3 | 44 |
| pignut hickory | Carya glabra | WDL | Medium | 0 | 0 | 0 | New Habitat | New Habitat | Medium | Absent | New Habitat | New Habitat | | | 0 | 45 |
| shagbark hickory | Carya ovata | WSL | Medium | 0 | 0 | 0 | New Habitat | New Habitat | Medium | Absent | New Habitat | New Habitat | Migrate + | Migrate ++ | 3 | 46 |
| sugarberry | Celtis laevigata | NDH | Medium | 0 | 0 | 0 | Unknown | New Habitat | Medium | Absent | Unknown | New Habitat | | | 0 | 47 |
| hackberry | Celtis occidentalis | WDH | Medium | 0 | 0 | 0 | New Habitat | New Habitat | High | Absent | New Habitat | New Habitat | | Migrate + | 3 | 48 |
| flowering dogwood | Cornus florida | WDL | Medium | 0 | 0 | 0 | Unknown | New Habitat | Medium | Absent | Unknown | New Habitat | | | 0 | 49 |
| American beech | Fagus grandifolia | WDH | High | 0 | 0 | 0 | New Habitat | New Habitat | Medium | Absent | New Habitat | New Habitat | Migrate + | Migrate + | 3 | 50 |
| blue ash | Fraxinus quadrangulata | NSL | Low | 0 | 0 | 0 | Unknown | Unknown | Low | Absent | Unknown | Unknown | | | 0 | 51 |
| black walnut | Juglans nigra | WDH | Low | 0 | 0 | 0 | New Habitat | New Habitat | Medium | Absent | New Habitat | New Habitat | | Migrate + | 3 | 52 |
| sweetgum | Liquidambar styraciflua | WDH | High | 0 | 0 | 0 | Unknown | New Habitat | Medium | Absent | Unknown | New Habitat | | | 0 | 53 |



| Common Name | Scientific Name | Range | MR | %Cell | FIAsum | FIAiv | ChngCl45 | ChngCl85 | Adap | Abund | Capabil45 | Capabil85 | SHIFT45 | SHIFT85 | SSO | N |
|--------------------|-------------------------|-------|--------|-------|--------|-------|-------------|-------------|--------|--------|-------------|-------------|------------|------------|-----|----|
| yellow-poplar | Liriodendron tulipifera | WDH | High | 0 | 0 | 0 | New Habitat | New Habitat | High | Absent | New Habitat | New Habitat | | | 0 | 54 |
| bigleaf magnolia | Magnolia macrophylla | NSL | Low | 0 | 0 | 0 | Unknown | Unknown | Medium | Absent | Unknown | Unknown | | | 0 | 55 |
| blackgum | Nyssa sylvatica | WDL | Medium | 0 | 0 | 0 | New Habitat | New Habitat | High | Absent | New Habitat | New Habitat | | | 0 | 56 |
| sycamore | Platanus occidentalis | NSL | Low | 0 | 0 | 0 | New Habitat | New Habitat | Medium | Absent | New Habitat | New Habitat | | | 0 | 57 |
| eastern cottonwood | Populus deltoides | NSH | Low | 0 | 0 | 0 | New Habitat | New Habitat | Medium | Absent | New Habitat | New Habitat | Migrate + | Migrate + | 3 | 58 |
| white oak | Quercus alba | WDH | Medium | 0 | 0 | 0 | New Habitat | New Habitat | High | Absent | New Habitat | New Habitat | Migrate ++ | Migrate ++ | 3 | 59 |
| swamp white oak | Quercus bicolor | NSL | Low | 0 | 0 | 0 | New Habitat | New Habitat | Medium | Absent | New Habitat | New Habitat | Migrate + | Migrate + | 3 | 60 |
| scarlet oak | Quercus coccinea | WDL | Medium | 0 | 0 | 0 | New Habitat | New Habitat | Medium | Absent | New Habitat | New Habitat | | | 0 | 61 |
| pin oak | Quercus palustris | NSH | Low | 0 | 0 | 0 | New Habitat | New Habitat | Low | Absent | New Habitat | New Habitat | | | 0 | 62 |
| chestnut oak | Quercus prinus | NDH | High | 0 | 0 | 0 | New Habitat | New Habitat | High | Absent | New Habitat | New Habitat | | | 0 | 63 |
| black oak | Quercus velutina | WDH | High | 0 | 0 | 0 | New Habitat | New Habitat | Medium | Absent | New Habitat | New Habitat | Migrate ++ | Migrate ++ | 3 | 64 |
| black locust | Robinia pseudoacacia | NDH | Low | 0 | 0 | 0 | New Habitat | New Habitat | Medium | Absent | New Habitat | New Habitat | Migrate + | Migrate + | 3 | 65 |
| slippery elm | Ulmus rubra | WSL | Low | 0 | 0 | 0 | New Habitat | New Habitat | Medium | Absent | New Habitat | New Habitat | | Migrate + | 3 | 66 |