# Inter-Tribal Forest Adaptation

***Honoring our forest communities on a changing landscape***

## Miinagaawanzh; Minmesh

### Lowbush blueberry (*Vaccinium angustifolium*)
### Huckleberry (*Vaccinium myrtilloides*)

Miinagaawanzh is a low shrub that grows in a wide variety of forests and openings, often in dry and acidic soils. Miinagaawanzh also grows on hummocks in peatlands, including bogs, muskegs, fens, and conifer swamps. Miinagaawanzh is native to North America and provides food and medicine to Anishinaabek, other people, and animals across Michigan.

### How vulnerable is Miinagaawanzh to climate-driven change in Michigan?

**VULNERABILITY RATING**

**LOW**

No major change in abundance, range extent, or tribal access by the year 2050

**MODERATE**

Abundance, range extent, or tribal access may decrease by the year 2050

**HIGH**

Abundance, range, or tribal access may decrease greatly by the year 2050

**EXTREME**

Abundance, tribal access, or range may decrease or disappear by year 2050

**Growth**

Miinagaawanzh benefits from small fires and other disturbances.

**Habitat**

Miinagaawanzh grows in a variety of forests & openings, often in dry soils.

**Harvest**

Miinagaawaanzh flowers and begins growing berries at four years of age.

## Changes in climate may impact how and where Miinagaawanzh grows

| Climate-driven changes | Possible impact on Miinagaawanzh | Questions to discuss |
|---|---|---|
| **Increasing temperatures** The average temperature increased by 2 F° over the past century and may increase 4-6 F° by 2050. | Warmer summer temperatures may lead to drier soils, which may benefit Miinagaawanzh. Warmer winter temperatures may reduce snowpack, allowing cold winter temperatures to harm Miinagaawanzh. | Have Miinagaawanzh been growing in new or different places? Has there been less snowpack in recent years? |
| **Increasing freeze-thaw cycles** Erratic freeze-thaw cycles occur in spring and fall. | Increasing freeze-thaw cycles in the springtime may reduce Miinagaawanzh flowering and fruit production. | Have late spring freezes caused less berries or other changes? |
| **Extreme storms and fire** Heavy storms may increase in number and intensity. | Heavy rain during flowering and pollination may decrease Miinagaawanzh fruit production. | Have storms changed how many berries grow in a season? |
| **Increasing invasive species** Invasive species may increase due to climate-driven change. | Increased competition from invasive species may reduce Miinagaawanzh growth and reproduction. | What other plants and animals impact Miinagaawanzh? |

## Working together to support native forest understory plants

Anishinaabeg maintain important knowledges on, and relationships with, local forests, waters, seasons, and cycles. The Inter-Tribal Council of Michigan is working with the Bay Mills Indian Community, Lac Vieux Desert Band of Lake Superior Ojibwe, Pokagon Band of Potawatomi, Saginaw Chippewa Indian Tribe, Michigan Natural Features Inventory, and Northern Institute for Applied Climate Science to understand and support forest understory plants across Michigan, based on Anishinaabe and Western scientific knowledges and ways.

INTER-TRIBAL COUNCIL OF MICHIGAN, INC.

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This work was funded by a United States Bureau of Indian Affairs Tribal Climate Resilience Program grant to the Inter-Tribal Council of Michigan. The contents of this document do not necessarily reflect the views or the policies of the Bureau of Indian Affairs.