

Ezhi-bimaadizimagak Manoomin

How wild rice lives

Babaamaangon Manoomin

Manoomin is highly vulnerable in June, while it is in the “floating leaf” stage of growth. During this period, the leaves of the plant float on the water surface, and the roots are not yet well developed, leaving it particularly vulnerable to physical disturbances and abrupt fluctuations in water levels.

Zaagakiimagad Ojiibik

Roots development begins early, both to help anchor the plant and to absorb nutrients, such as nitrogen, phosphorus, and potassium. Because the roots of Manoomin are capable of growing in soil conditions that are unfavorable to other aquatic plants, and because its roots deteriorate more slowly, Manoomin enhances water quality by retaining nutrients that encourage algal blooms and reduce oxygen levels.

Maajiigin Manoomin

In order to germinate, Manoomin requires cold water temperatures below 35°F. In Spring, when water temperatures rise above 45°F, germination begins. If conditions are unsuitable, seeds may remain dormant until the following Spring. Some seeds remain dormant for five or more years. This extended dormancy allows Manoomin to survive occasional crop failures.

Manoominashk

The stem emerges from the water and grows to be 2-6 feet above the surface late in June and early in July. Plants may have only one primary stem which produces a seed head, or the plant may develop multiple stems, sometimes 20 or more, each with its own seed head.

Ani-aditewan Waabigwaniinsan

There are two types of flowers. Tiny white flowers bloom first, and 3-4 days later, yellow and pink flowers bloom. Manoomin is wind-pollinated. However, because flowers open at different times, cross-pollination and self-pollination likely occur also.

Manoomin

Manoomin generally matures later in August or early in September, but maturation varies from water to water. Harvesting should only begin when seeds are fully developed, and are ready to drop off.

Impacts on Manoomin

CLIMATE CHANGE increases the frequency and threats of disease, pests, and extreme weather events.

SEVERE STORMS, HEAVY RAIN and other extreme weather events can damage Manoomin.

BROWN SPOT DISEASE is a fungus that causes lesions on Manoomin leaves and interferes with seed development.

RICE WORMS (*Apamea apamiformis*) are more prevalent in warmer weather conditions and feed on Manoomin leaves and seeds.

OVERGRAZING by geese, trumpeter swans, muskrats red-winged blackbirds, etc. can prevent Manoomin from reseeding.

BOATING through Manoomin and disregarding “No Wake” designations can uproot rice plants.

SULFATE is commonly discharged through industrial- and mining-related activities.

COMMON CARP feed on Manoomin seeds and physically disturb and uproot Manoomin.

NON-TRADITIONAL HARVESTING methods and equipment may reduce and damage Manoomin. Using bawa`iganaakoog (smooth, rounded wooden ricing sticks) and a gaandakii`iganaak (push pole) to navigate is best.

PIPELINES drastically modify the landscape, alter hydrology, and are susceptible to spilling and leaking crude oil.

MINING-RELATED ACTIVITIES directly lead to fluctuations in water levels and increases in sulfate and other pollutants and toxins.

PHOSPHOROUS is a common nutrient found in agricultural fertilizers, manure and animal feed. In excess, phosphorous can cause harmful algal blooms that limit sunlight and oxygen in water.

BAKAAN INGOJI GAA-ONDAADAK such as milfoil, cattail (*Typha angustifolia*), common reed and other species compete with Manoomin for necessary nutrients.

LAND USES associated with extractive industries, wastewater facilities and transportation infrastructure can harm Manoomin.

DEREGULATION of environmental laws and policies that establish water quality standards and protection harm Manoomin.

EROSION diminishes water quality and clarity.

DAMS, CULVERTS and other water control structures alter the hydrology and cause rapid fluctuations in water levels.

HARVESTING before Manoomin is mature often results in “ghost rice” or empty rice hulls that never fill.