

ISD 622 Office of American Indian Education

4th Grade Science

Wild Rice Lesson



[CLICK HERE FOR MN STATE STANDARDS](#)

NEXT

Learning Tools from the Ojibwe/Dakota Learning Trunk

- Green wild rice (right off the lake in husks)
- Processed wild rice
 - Rice knockers
 - Birch bark canoe
 - Winnowing basket



New Vocabulary Words

Aquatic – something that grows or lives in the water

Manoomin – the Ojibwe word for wild rice

Harvest – the act of gathering a crop

Parching – to toast under dry heat

Husk – the part of the plant that covers the rice grain

Threshing/jigging – to separate the husk from the grain.

Ojibwe people jig or lightly dance on the rice to remove the husk

Winnowing – to remove the chaff or husks by a current of air from the rice

Process – a series of actions taken toward an end result



Science Vocabulary Words

Sediment - matter that settles to the bottom of a liquid

Germination - to start developing or growing sprout, as from seed

Emergent - to rise as from a fluid, to become visible

Senescence - biological aging

Invasive species - non-native (or alien) to ecosystem, whose introduction causes economical or environmental harm

Hydrology - the branch of science concerned with the properties of the earth's water, especially its movement in relation to land



Wild Rice Introduction

Wild rice was chosen to be Minnesota's State Grain although it is actually an aquatic grass that grows in the muddy lakes and streams of the Upper Great Lakes Region.



CLICK
HERE TO
PLAY



← BACK NEXT →

Why is wild rice important?

Wild rice has been an important food source for Indigenous people in the Great Lakes Region for thousands of years.



← BACK

NEXT →

For the Ojibwe people, their home long ago was on the shores of the Atlantic Ocean. Through the centuries they moved westward - up the St. Lawrence River, finally reaching the land that would become Minnesota where they found the food that grew on water, wild rice. It remains a traditional and social connection in ceremonies and feasts. The Ojibwe name for wild rice is Manoomin. Which means “the good berry.”

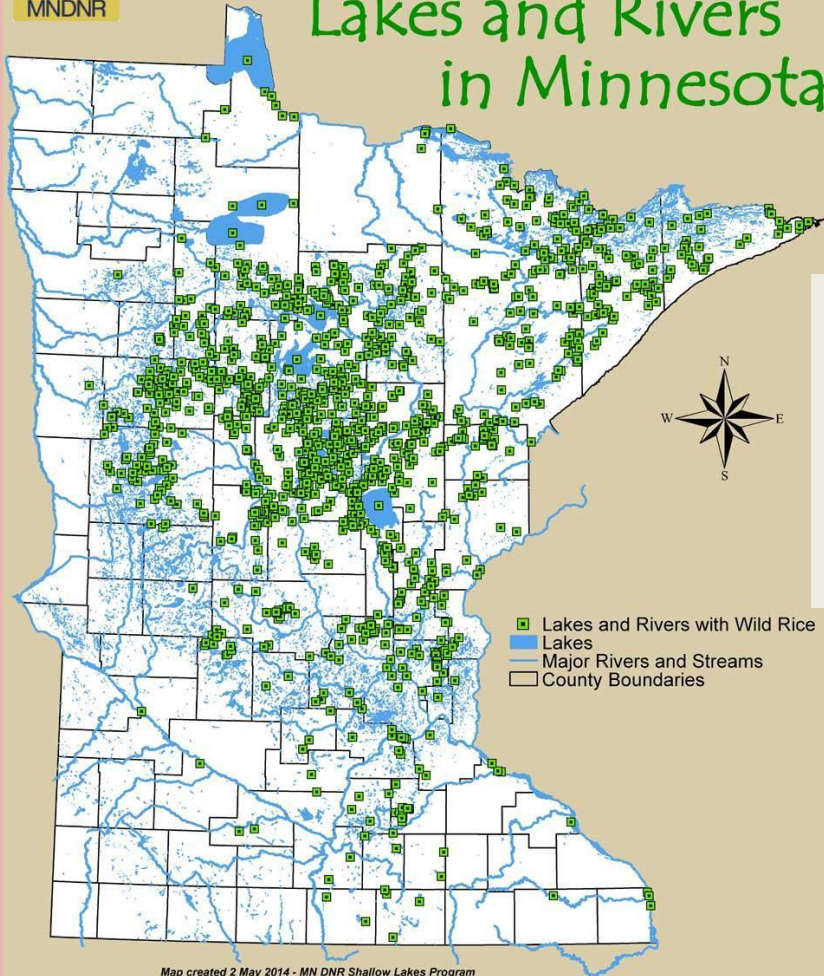


Wild rice is a key element in coastal and interior wetlands that provide food, cover and spawning habitat for a large variety of wildlife.





Wild Rice Lakes and Rivers in Minnesota



Wild rice is a substantial food crop for Minnesota worth at least \$2 million dollars to our state's economy each year.

← BACK

NEXT →

What conditions does it take to grow wild rice?

Habitat that contains:

- Shallow water 6 inches - 3 feet (very sensitive to water level change)
- Water needs to be gently moving
- Best soil conditions is soft sediment
- Water must be clean not cloudy (so sunlight can reach the roots)



What is the Life Cycle of Wild Rice?

1. Seeds fall into water and settle into sediment (Sept-Nov)

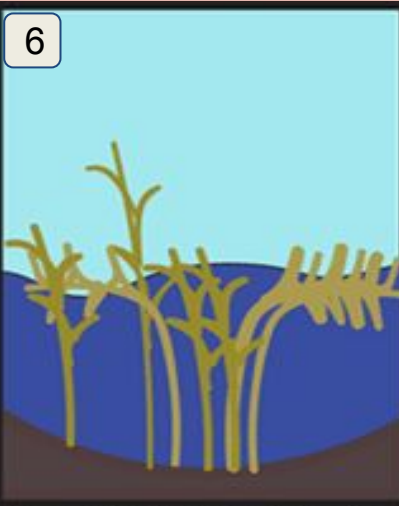
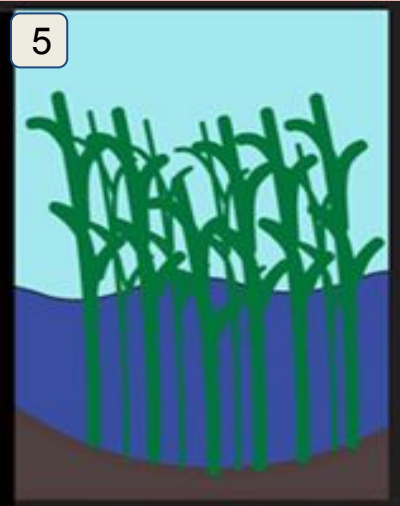
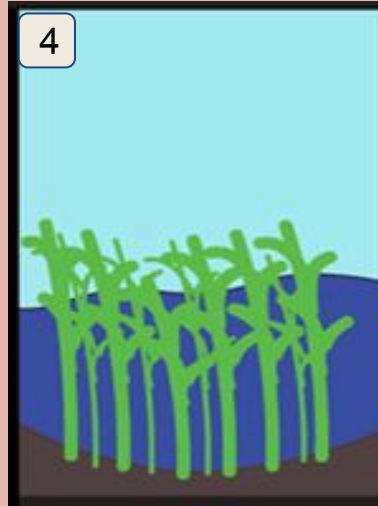
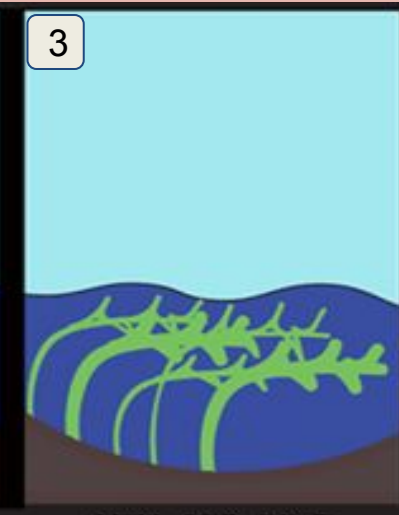
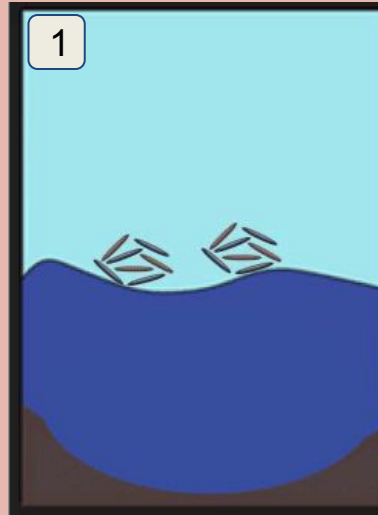
2. Germination requires 3-4 months at cold, nearly freezing water (April)

3. The emergent stage begins with one or two floating leaves (May-mid June)
Stalks continue to grow 3-10 feet tall)

4. Wild rice begins to flower then pollinated by the wind (Late July)

5. The mature plants produce seeds that are traditionally harvested or eaten by wildlife. (late August - September)

6. Senescence, the biological aging occurs and the plant recedes into the water.



← BACK

NEXT →

Wild Rice

Let's see how we would **harvest** wild rice like the Ojibwe people

You **harvest** wild rice by knocking it into your canoe with your wooden knocker. You use a paddle to spread your rice on birchbark mats. You **parch** your rice over a fire with a paddle to dry the rice and loosen up the hulls. You dance or **jig** on the rice with new moccasins to help remove the hulls from the rice.



On a windy day you use a **winnowing** basket to gently throw the rice into the air so the hulls will be blown away. Now you are ready to cook and eat your wild rice!

[Watch 7 minute Ricing Video](#)



Wild Rice is in trouble! Many historic wild rice beds no longer exist and others are producing less and less rice. What are some factors that contribute to the decline of wild rice habitat?

Climate Change

Fluctuating water levels due to extreme flood events, water control, man made or beaver made dams.

Disturbance due to boat traffic

Pollution from activities such as mining

Overgrazing by native species such as Canadian geese and muskrats



**Water Quality
r does not
own to the
roots**

**ies (carp,
ilfoil, etc.)**



Most of these problems have grown over the last two hundred years.

CLICK
HERE TO
PLAY



How many of these factors are created by Humans?

← BACK NEXT →

How can people help sustain wild rice for future generations?



Which the following would help in the short term (1-2 years), which would take longer to make a positive impact?

← BACK

NEXT →

How can people help sustain wild rice for future generations?

Create surface water monitoring programs to include basic chemistry, metals in the water and nutrients

Create a program to remove and reduce the introduction of invasive species to ricing waterways through monitoring boats and public education

Do what we can to reduce climate change

Create boundaries for boat use around ricing beds

Create a re-seeding program for lakes that have lost their ricing beds.



BACK

NEXT

Reseeding a Wild Rice Bed



Through education and science Tribal governments and the Minnesota Legislature along with non-profit organizations have begun the work to save and restore many of our wild rice lakes. The tribal community and others think of a resource like wild rice as a gift, something to protect and value. What can you do to help?

← BACK

NEXT →

Resources

1. Organizations working to restore and save wild rice beds.

Efforts to Restore Native Wild Rice in the St. Louis River Estuary | NOAA Fisheries

Fond du Lac Band Restores Wild Rice in Minnesota | AgWeb

Big Rice Lake Wild Rice Enhancement | Minnesota's Legacy (mn.gov)

Wild Rice Management and Restoration | Natural Resource Department (kbic-nsn.gov)

2. Government support through passing bills to fund projects

Bill Search, Status, and MyBills - Minnesota State Legislature (mn.gov)

Example - Here is a bill that requested dollars to help protect wild rice beds.

Bill HF 151 2021-22 - one section of this bill:

i) Collaborative State and Tribal

\$644,000 the first year is from the trust fund to the commissioner of natural resources to work with tribal partners to create a collaborative and comprehensive program to conserve wild-rice waters, develop remote sensing tools for statewide estimates

BACK

NEXT

Resources

3. Education and more information on wild rice:

Great Lakes Indian Fish and Wildlife Commission

www.glifwc.org

Articles in Education : Ricing with Tommy Sky

Brochure: Wild Rice - Ecology - Harvest - Management

Brochure: Manoomin - Wild Rice - The Good Berry

Minnesota Dept. Of Natural Resources

https://files.dnr.state.mn.us/fish_wildlife/wildlife/wildrice/natural-wild-rice-in-minnesota.pdf

Circle of Blue - Where Water Speaks

Wild rice Archives - Circle of Blue

Scientific American - Climate Change Threatens the Ancient Wild Rice Traditions of the Ojibwe

<https://www.scientificamerican.com/article/climate>

<https://www.scientificamerican.com/article/wild-rice>



Works Cited

Slide #6- Seth Eastman picture

<https://kids.britannica.com/students/assembly/view/218290>

Slide #8- [Endless beds of wild rice, endless waves of ducks \(inforum.com\)](#)

Slide #9-

https://images.dnr.state.mn.us/fish_wildlife/wildlife/shallowlakes/wildrice-map.jpg

Slide #10 - Shallow Lake - Diamond Lake, [Shallow Lake Reflections | Diamond Lake along Highway 51 near... | Flickr](#)

Slide #11-

https://www.researchgate.net/figure/The-annual-life-cycle-of-northern-wildrice_fig1_344286815

Slide #15- [Wild Rice Seed for Sale | River Refuge Seed | Oregon](#)

Slide #17- [Spotlight on People and Pollution: Wild rice, pollution, and space for traditions to grow | NOAA's Office of Response & Restoration Blog](#)

BACK

NEXT

4th Grade Science Wild Rice Lesson

Minnesota State Standards - Earth and Space Science

Benchmark 4E.4.2.2.1- Obtain and combine multiple sources of information about ways individual communities, including Minnesota American Indian Tribes and communities and other cultures use evidence and scientific principles to make decisions about the uses of Earth's resources.* (P: 8, CC: 4, CI: ESS3, ETS1)

Examples of cultures may include those within the local context of the learning community and within the context of Minnesota. **Examples may include balancing the water, soil, wildlife, plant, and human needs to support sustainable use of resources.**



BACK