DEPARTMENT OF AGRICULTURE

Wild Rice Legislative Report

2023 Omnibus Ag Bill (SF 1955)

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Contents

Executive Summary 1

Findings: 1

Recommendations: 2

Key governments: 2

Key stakeholders: 3

Introduction 4

Purpose and objectives 4

Background 4

Methodology 14

Meetings 14

Email 15

Background sourcing 15

Input 15

Tribal perspective 15

Cultivated wild rice producer/Minnesota Wild Rice Council perspective 17

University of Minnesota perspective 18

Areas of Agreement and Disagreement 20

Areas of agreement: 20

Areas of disagreement: 21

Considered Actions 22

Full agreement 23

Partial agreement 23

Disagreement 24

Conclusion 25

Resources 26

References 26

Executive Summary

Findings:

This report serves as a culmination of extensive conversations held to provide recommendations on the future of the wild rice breeding program in Minnesota. These discussions revealed the profound cultural, economic, and environmental significance of wild rice, reinforcing the need for careful consideration and action. Key findings include:

- **Biodiversity preservation:** All parties stressed the necessity of preserving wild rice's genetic diversity, especially in the context of climate change and environmental challenges. This preservation is essential for the plant's long-term resilience, though the suggested approaches differed.
- **Increased yields:** Conversations underscored the potential benefits of breeding programs in developing high-yielding wild rice strains. Such strains could enhance economic viability, benefiting tribal communities and commercial growers alike. This was not a sentiment shared by all, as most tribes expressed opposition to breeding.
- **Cultural sensitivity:** It became evident that cultural sensitivity must be at the forefront of any breeding program. Tribal involvement and respect for traditional practices and cultural viewpoints are paramount for a collaborative and culturally aware approach.
- **Market demand:** The growing market demand for wild rice due to its unique flavor and nutritional value was emphasized. Cultivated wild rice producers view the breeding program as a sustainable means to meet this demand, thereby bolstering economic prospects for the industry.
- **Communication challenges with tribes:** The report acknowledges the persistent issues surrounding communication with Minnesota tribes. Tribes have expressed concerns about inadequate inclusion in decision-making processes, breeding programs and the lack of representation in key discussions about wild rice.

These findings reflect the diverse perspectives and priorities of parties involved in shaping the future of the wild rice breeding program in Minnesota. The report seeks to convey the breadth of these conversations and the importance of a balanced approach that considers cultural heritage, biodiversity, economic growth, and improved communication with tribal nations. For more detailed considerations for recommendations see the Considered Actions section.

Recommendations:

- **Funding for environmental stewardship and conservation:** Allocate funding to prioritize wild rice conservation and preservation efforts, emphasizing the protection of natural stands of wild rice and genetic diversity.
- **Increase effective communication with tribes:** Establish a communication framework, or improve an existing framework, for the University of Minnesota to engage with Minnesota tribes in meaningful dialogue regarding wild rice conservation, cultivation, and breeding programs. Seek tribal input, insights, and consent in decision-making processes. Due to differing views and uniqueness of each tribe, it is crucial to ensure involvement of all interested tribes. Though there is full agreement on the goal of increasing communication with tribes, there is not agreement on the approach.
- **Temporarily suspend breeding activities:** Suspend breeding activities until more analyses are conducted with tribal consent and collaboration; this is a compromised approach. Analyses can include more robust and definitive research regarding genetic drift and impact analyses which may include economic, health, cultural, and other considerations.
- **Wild rice and cultivated wild rice education:** Public education can help consumers make informed choices, differentiating between hand-harvested natural stand, culturally significant wild rice, and commercially cultivated varieties. Education can protect the cultural heritage of Minnesota's tribes, ensure fair market competition, and promote the conservation of natural stands of wild rice by valuing their uniqueness.

Key governments:

- **Minnesota Department of Agriculture (MDA):** Involved in food security, environmental protection, and economic security. Facilitated meetings and other communications with parties, and authored report.
- **Bois Forte Band of Chippewa:** Participated in both meetings.
- **Fond du Lac Band of Lake Superior Chippewa:** Participated in the July 24 meeting, filled out survey, provided written input as well as comments during consultation.
- **Grand Portage Band of Lake Superior Chippewa:** Participated in the July 24 meeting and provided input during consultation.
- **Leech Lake Band of Ojibwe:** Participated in both meetings.
- **Lower Sioux Indian Community:** Did not participate but expressed support for northern tribes during consultation.
- **Mille Lacs Band of Ojibwe:** Participated in both meetings.
- **Prairie Island Indian Community:** Did not participate but expressed support for northern tribes during consultation.
- **Red Lake Nation:** Participated in both meetings and provided written input.
- **Shakopee Mdewakanton Sioux Community:** Participated in both meetings and filled out survey.
- **Upper Sioux Community:** Did not participate.
- **White Earth Nation:** Participated in both meetings.
- **1854 Treaty Authority:** Natural resources regulatory authority in the 1854 Treaty area for the Bois Forte and Grand Portage tribes. Participated in both meetings, filled out survey, and provided written input.

Key stakeholders:

- **Cultivated wild rice growers and producers:** Interested in supporting cultivated wild rice production, and therefore the Wild Rice Breeding Program, for economic and cultural purposes. Affected by potential labeling law reforms from California. Provided input during the August 8 meeting and filled out survey.
- **Minnesota Cultivated Wild Rice Council:** Represents the interests of cultivated wild rice producers and provided input during the August 8 meeting, filled out survey, and provided written input.
- **University of Minnesota, College of Food, Agricultural and Natural Resources Sciences (CFANS):** Critical for research, development, and educational initiatives related to wild rice conservation and breeding programs and attended both meetings.

This report aims to guide legislative decisions in preserving the rich cultural heritage, biodiversity, and economic potential of wild rice in Minnesota while ensuring consumer transparency and protection.

Introduction

Purpose and objectives

This report fulfills the requirements of Session Law 2023, MN Statute 41A.14.: 'The commissioner of agriculture must convene a group of stakeholders, including representatives of Minnesota Tribal governments as defined in Minnesota Statutes, section 10.65; cultivated wild rice producers; the College of Food, Agricultural and Natural Resource Sciences; and the University of Minnesota, to make recommendations about the future of the wild rice breeding program. The commissioner must submit a report on the recommendations to the chairs and ranking minority members of the legislative committees and divisions with jurisdiction over agriculture by January 15, 2024.'

The wild rice study document and its appendices are intended to provide the reader with a thorough background on the importance of wild rice to Minnesota, including the difference between cultivated wild rice and natural wild rice, as well as perspectives from participants to make recommendations regarding the future of the wild rice breeding program.

Background

Wild rice (Zizania palustris), holds cultural, economic, ecological and health significance in Minnesota. Any decision regarding the future of the wild rice breeding program impacts both tribes and cultivated wild rice producers as well as the breeding program itself. The following provides background on wild rice in Minnesota. For purposes of this report, natural stand wild rice occurs in the natural environment and is hand harvested in traditional ways. Cultivated wild rice is wild rice varieties bred for certain traits, grown in artificially flooded paddies as a crop, and harvested with agricultural machinery.

Cultural

Wild rice (Zizania palustris), known as manoomin in the Ojibwe language, psiŋ in the Dakota language holds deep cultural and economic significance in Minnesota. It has played a pivotal role in the history of the state and its Indigenous peoples.

Excerpt from 2018 Tribal Wild Rice Task Force report:

The third of seven prophets came to the Anishinaabe people more than one thousand years ago and told them to head west to their chosen land. When they found "the food that grows out of the water," they would know they were home, and this sacred food would feed their families' bodies and souls for generations to come. This journey is at the core of the Ojibwe migration story, and the sacred food at the center of their cultural identity, spiritual traditions, and physical well-being is manoomin (Ojibwe word for wild rice). To the many bands of Ojibwe people who have made their homes for centuries around the lakes of Minnesota, manoomin is far more than a crop or a staple food. It is a sacred symbol that represents their journey, their relationship to the land that sustains them, and their very identity as Ojibwe people. Anishinaabe people live by the philosophy "that if we care for the nibi (Ojibwe word for water) and manoomin, the manoomin will care for us".

While Ojibwe or Anishinaabeg historic and cultural connections to wild rice have been communicated to the public through various media, many people are surprised to learn that ricing also has deep roots in Dakota

history. Dakota people used to travel without boundaries around the land which is now the state of Minnesota. Psiŋ (Dakota word for wild rice) was abundant across the state, including in southern Minnesota. Lakes and rivers were clean enough for psiŋ growth then, with unaltered hydrology.

Dakota people were ricing long before the Ojibwe's prophecy relocated them to the Dakota homelands. Dakota people shared their ricing traditions with the Ojibwe, and these traditional harvest and parching methods are those still used by the native communities today. The settlement era influenced the placement of Dakota people in the southern reaches of Minnesota along the Minnesota and Mississippi Rivers. Dakota people have harvested psiŋ both when it was in the territory they occupied, and when it was in "contested territory" or the section of Minnesota that was then a war zone where people weren't allowed to camp. That territory was often hunted and harvested by both peoples' groups.

Four Dakota communities now reside in the southern half of Minnesota, with Prairie Island Indian Community lands located along the Mississippi River near Red Wing, Shakopee Mdewakanton Sioux Community located just off the Mississippi River near Prior Lake in Shakopee, and Lower Sioux Indian Community & Upper Sioux Indian Community residing in the Minnesota River valley.

According to Jenks (1901) and many oral history accounts, manoomin/psiŋ used to grow along the reaches of the Mississippi and Minnesota Rivers, as well as the St. Louis River basin. Deloria (1967) gives an account of people in the Red Wing area gathering psiŋ, along with places specifically near Sakpe (now Shakopee) and St. Paul. Oral history tells us Dakota people gathered psiŋ for sustenance along the Mississippi River and backwater lakes on down to Lake Pepin. Psiŋ sustains the Dakota culture to this day, but there is hardship being that psiŋ no longer grows with the same abundance it once did along these rivers.

The Dakota custom of harvesting psiŋ has never stopped since a time immemorial. However, Dakota people now have to travel much farther to reach areas where psiŋ is appropriately abundant for harvest. For many, this means traveling to another Tribe up north because psiŋ has been removed for so long from Dakota people's current place of residence that the tradition surrounding an annual harvest has been lost. Psiŋ is still deeply embedded in Dakota culture as is evident in ceremonies, gifts, diet, and traditions carried down for generations. The Dakota communities today are working to restore the rice that was once there, and bring back this nutritious resource to their own lands.

This very brief history of the Dakota people tells of a broken connection with something that was abundant in their homelands and is no longer. The Dakota nations must rely on their relatives in the northern half of the state to supply manoomin/psiŋ for restoration seeding, for consumption, and for ceremonies. May this history show us clearly that Minnesotans need to prevent the loss of any more rice in northern regions of Minnesota where manoomin/psiŋ still grows in its native range. Manoomin/Psiŋ is health and life to tribal culture both for the Ojibwe and Dakota people.

Minnesota tribes entered into treaties with the United States in the 1800's to reserve hunting, fishing, and gathering rights in the lands and waters ceded to the United States. The exercise of these rights is fundamental to tribes' cultures and ways of life and maintains religious, ceremonial, medicinal, subsistence, and economic needs. Every federal agency has a responsibility to these tribes and their treaty rights, and this extends to the protection of the habitats and environmental quality that sustain manoomin/psiŋ. The recognition of sovereign rights is part of any given tribes' ongoing struggle to preserve a culture that is best understood in terms of their relationship with the natural environment. Tribal members continue to harvest and rely upon manoomin/psiŋ

for religious purposes including naming ceremonies, funerals, Midewiwin ceremonies, and various seasonal feasts.

These activities are critical components in perpetuating Anishinaabeg/Dakota lifeways and cultural practices. Anishinaabeg/Dakota spiritual beliefs mandate the use of certain plants, animals, and fish in ceremonies attendant to hunting, fishing, and gathering activities. These ceremonies ensure the perpetuation of the resources and the physical, mental, and spiritual well-being of the person. Tribal leaders have noted that elders in their communities reaffirmed the position that traditional foods, including manoomin/psiŋ, are medicine for Anishinaabe and Dakota people. Today, tribes experience higher than average rates of diseases such as diabetes and heart disease. Much of the current state of Native American health can be traced back to historical practices that have displaced tribes and limited access to healthy and traditional foods, such as manoomin/psiŋ. Many tribes are dependent upon manoomin/psiŋ for subsistence needs.

Many Native Americans eat manoomin/psiŋ at least once a month, though historically this rate was much higher. Survey results show that manoomin/psiŋ is the most commonly consumed traditional food, and Native Americans wish to eat it more often. The annual hand-harvest on Minnesota lakes and rivers is a cherished ritual that preserves time-honored traditions and builds tribal community.

Harvesting rice by hand is part of a deeply held belief that this wild gift from the Creator, and the land that sustains it, should be treated with respect and gratitude rather than cultivated and exploited. Hand-harvested rice is frequently offered as gifts and is used as an offering in spiritual ceremonies and funerals.

Health and subsistence

Despite its cultural significance, Minnesota tribes have experienced challenges in documenting and publicizing the impacts to community health, social cohesion, and access to healthy food that they bear as wild rice resources are being degraded and diminished. The Fond du Lac Band attempted to bring these health and cultural inequities to light in a Health Impact Assessment or HIA, and to clearly and simply articulate the importance of manoomin to the health of the Ojibwe people. This HIA explored historical trauma, grave disparities in health outcomes and access to health care, and socioeconomic inequities (social determinants of health) that shape the lives of traditional people in a modern world. It highlighted the need to protect and support resilient cultural and spiritual practices that connect people to their ancestors, their identity, and future generations. The practices of harvesting, processing, eating, sharing and gifting manoomin; the language associated with these practices and ceremonies that celebrate manoomin are central to the health of tribal communities.

From Expanding the Narrative of Tribal Health: The Effects of Wild Rice Water Quality Rule Changes on Tribal Health (Fond du Lac Health Impact Assessment 2018):

“Food sovereignty is the right of peoples to healthy and culturally appropriate food produced through ecologically sound and sustainable methods, and the right to define their own food and agricultural systems… Harvesting what is naturally occurring and compatible with one’s own environment is a key component. When people harvest, process, prepare and serve native foods, they build strong relationships with the land and with each other… The establishment of reservations limited access to traditional foods and replaced them with less nutritious, more expensive store-bought foods, leading to nutritional deficiencies and food insecurity that Native

Americans experience today… A history of displacing tribes and limiting access to traditional foods like manoomin has had profoundly negative and persistent impacts to Native American health and well-being."

To address these health disparities, Prairie Island Indian Community (PIIC) has initiated a movement of food sovereignty in the community. In 2017, PIIC conducted a Food Sovereignty Assessment which strongly revealed a desire by the community to increase the availability, harvesting opportunities and consumption of local psiŋ. PIIC community members classified psiŋ as one of the top five "food(s) that you need or would like to eat that are difficult to get, or are not available, in your community" (Community Assessment Report, 2017). In addition, out of the 75 respondents, 88% felt that "health issues (such as diabetes, heart disease, and obesity) in our community are related to food and diet" and 82% felt that "health issues would improve with access to traditional foods" (Community Assessment Report 2017). This puts a high importance on increasing access to Indigenous foods like psiŋ for the health of the community.

Also in the 2017 Food Sovereignty Assessment, the following comments relating to psiŋ were provided in response to the question "if you could tell your tribal or community leaders anything about food and hunger issues in your community, what would you tell them?"

- We need to utilize our land to grow our own foods
- Food is healthcare
- Reconnecting with our land is important to food issues
- Increasing access to traditional foods in order to teach about them
- Providing better access to healthier, fresher food in order to provide people with options
- Becoming as self-sufficient as possible would benefit our community greatly
- More people would eat healthier if they had better access to healthier food
- We need to introduce more traditional foods into community events

A movement in bringing back cultural traditions surrounding wild rice is also taking place at PIIC as multiple educational community events have been happening each year since 2015.

These events, in addition to continued tribal community involvement in psiŋ restoration efforts, include harvesting field trips, parching, push-poling, and cooking classes.

Similarly to PIIC, the Lower Sioux Indian Community is addressing concerns on food sovereignty. The 'Honoring Little Crow through Healthy and Indigenous Foods Initiative' resolution was adopted by the Lower Sioux Tribal Council in 2016. This policy was developed to implement a system change to increase visibility of and access to healthier Indigenous food and beverage choices to support a healthy Lower Sioux Community. Results from the Community's 2018 Food Sovereignty Assessment found that almost half of the respondents considered wild rice the top choice of traditional foods. However, nearly 75% of the respondents stated that they are not able to eat traditional foods as often as they would like. The Lower Sioux Office of the Environment is working on wild rice restoration efforts at four trial sites within the Community (initial seeding in 2015). During the same time, Lower Sioux Recreation department has provided trips during wild rice harvesting season so the Dakota Youth are able to experience ricing "Up North".

Ecology

Wild rice (genus Zizania) is an annual grass that grows in shallow water and slow flowing streams and produces an edible grain. It is native to Minnesota and can be found in 55 counties in the northern region of the state and few in the southern region, though its range once covered the entire state. Current coverage of wild rice has declined to at least 64,000 acres when growing conditions are favorable.

A fast-growing, aquatic grass, it sustains both migratory and local wildlife, providing critical food and shelter at every stage of its growth and throughout all four seasons. Migrating and resident species alike rely on the plant's nutritious and abundant seeds. In the fall, many species of duck rely on wild rice as a staple food source.

Plant stems provide brood cover for waterfowl and nesting material for species such as common loons, red-necked grebes, and muskrats. Insect larvae that feed on wild rice serve as a rich food source for blackbirds, bobolinks, rails, and wrens. In the spring, decaying rice straw supports a diverse community of invertebrates that in turn supports birds, fish, and amphibians. In the summer, the whole plant provides food for herbivores like Canada geese, trumpeter swans, muskrats, beavers, white-tailed deer, and moose. In the late summer, wild rice provides cover for molting waterfowl and their young. Due to the plant's diverse ecological value, wild rice lakes and streams serve as breeding and nesting areas for at least 17 species listed as "species of greatest conservation need" on MNDNR's Comprehensive Wildlife Conservation Strategy. As an aquatic plant, it also provides habitat for fish. Wild rice provides additional ecological values by improving the quality of ecosystems, allowing for increased ecosystem function. By sequestering nutrients such as phosphorous and nitrogen, wild rice enriches soils while countering the negative effects of nutrient loading in water bodies that can cause algal growth and turbidity. Stands of wild rice form windbreaks and slow water velocity, limiting the mixing of soil nutrients into the water column. They also prevent erosion by stabilizing loose soils.

Management and restoration

The Stoney Brook watershed encompasses over half of the Fond du Lac Reservation in northeastern Minnesota, at 59,248 acres, and its headwaters include the Reservation's premier wild rice lakes, designated as "Outstanding Reservation Resource Waters" in the Band's federally approved Water Quality Standards. The watershed was extensively ditched under judicial order in the early 1900's to drain wetlands and open up acreage for crop agriculture, facilitate development, and encourage non-tribal settlement on tribal lands. But the substantial hydro-modification of this ditch system persists, and has resulted in detrimental fluctuating water levels in the wild rice lakes and significant stream and riparian habitat impairment throughout the watershed.

Because of the altered drainage, water level fluctuations in the wild rice lakes, perhaps the single most critical factor affecting natural wild rice productivity, are difficult to moderate during storm events.

Wetlands have been fragmented, and while the direction and flow of shallow ground water between the wild rice lakes is not well understood, it has likely been impacted by the ditch system. The ditch system, which was excavated between 1916 and 1921, lowered the lake levels on Perch, Jaskari, Rice Portage, Miller, and Deadfish Lakes. The total area of these five wild rice lakes prior to the excavation of the drainage ditches was 1,617 acres. The partial drainage of the lakes resulted in the loss of 850 acres of wild rice habitat to competing vegetation such as cattail, pickerel weed, water lily, sedge, and horsetail.

The Fond du Lac Band is very committed to protecting, managing, and restoring their wild rice lakes. Tribal leadership has expended considerable resources on the restoration of critical habitat on these wild rice lakes, and has directed the Fond du Lac Natural Resources Program (NRP) to manage and restore the wild rice lakes. Over the past twenty years the NRP has planned and implemented projects to accomplish this goal. A series of four water control structures were built to manage water levels for optimizing wild rice growth, and to restore the lakes to their historical size. Restoring lake levels and proper water level management will help the remnant wild rice stands thrive, but lake level management alone cannot restore wild rice in the areas choked with competing vegetation. The restoration of open water habitat favorable for wild rice requires the mechanical removal of many acres of vegetation with a large sedge mat cutter and two aquatic weed harvesters. The benefits from restoring the wild rice lakes include improved wildlife habitat, especially for waterfowl, in addition to providing wild rice for harvesting.

The topography of the White Earth Reservation varies greatly throughout its boundaries and ranges from prairie pothole, transition zones to forests. The landscape supports over sixty-eight thousand acres of surface waters and over three hundred miles of rivers and streams across three watersheds. The soils also range from loam, heavy clay to sandy. Within these zones a multitude of land uses occur, including agriculture. As agriculture practices increase so does the use of fertilizers, pesticides, and herbicides, resulting in negative impacts to surface waters and aquatic life including wild rice.

With the added stress of runoff, sedimentation, lack of adequate surface water buffers and accumulation of sulfate, aquatic life is in dire need of protections.

In 1938 the U.S. Army Corps of Engineers built Lock and Dam 3, located in Red Wing, MN, creating Pool 3 of the Mississippi where the Prairie Island Indian Community (PIIC) now resides. The desire to create better shipping lanes along the Mississippi brought about the installation of lock and dams and a 9-foot-deep shipping channel along the length of the river. Pool 3 contains both Sturgeon and North Lake, where psiŋ originally grew. The implementation of the lock and dam system drastically changed the function of the river. It created better shipping lanes, but also flooded much of PIIC land. The flooding from the dam increased the size of Sturgeon Lake and North Lake, greatly expanding the backwater areas of the Mississippi. Many isolated lakes and large expanses of marshland important to fish, waterfowl, plants, and other native wildlife were lost. These hydrology changes are thought to be a large reason why psiŋ beds shrank or were extirpated on the Mississippi in the years following the installment of the dams.

PIIC has been working to re-establish psiŋ since 2003 in the Mississippi backwaters and wetlands of Tribal land with a goal to restore 30 acres of wild rice beds. PIIC land sits on about 2,200 acres of backwater lakes, with a band of emergent plants and wetlands encompassing large portions of the Island. PIIC's restoration process includes planting psiŋ in areas of potential growth. Psiŋ is an annual plant, so if flooding prevents growth one year it is not able to re-seed itself for the following year – creating a challenge in the growth cycle. Stocking up a seed bank aids the rice in adapting to its environment, as some rice seed will remain dormant for a number of years before growing. The Land & Environment Department organizes follow-up aquatic plant surveys and appropriate seeding each year to document this re-establishment effort for the Tribe. There have been several years of psiŋ growth on PIIC; 2013, 2015, 2017 being three recent years marking dense rice beds and full growth. Even so, the restored psiŋ beds have totaled just over 7 acres in size and continue to struggle due to extreme spring flooding events. Clearly, there is still more work to be done in restoration on PIIC lands.

Economic importance, past and present

In assessing the importance of manoomin/psiŋ to tribal economies, it is important not to limit the benefit metrics to job and income measures. Regarding tribal manoomin harvests, sales of a portion of the harvest are often used to supplement subsistence (i.e., selling a portion of the manoomin harvest to cover costs for gasoline and other expenses enables tribal members to participate in subsistence activities and provide food for their extended families). Because tribes were forced to participate in a western cash economy by European settlement, and manoomin has been appropriated as a commodity, it has since become a source of material wealth and economic survival for the Ojibwe as well. However, the traditional role of manoomin/psiŋ is still clear today.

Historically, wild rice was the most important grain in Minnesota's economy. Because it was a dietary staple, easily stored for long periods of time, and easy to use, it held considerable economic value for native people and early explorers and settlers. Although other grains became common over time as they were introduced to Minnesota by immigrants, wild rice continued to be popular. Records of state license sales going back to the 1950s clearly show the enduring popularity and value of wild rice. More than 300,000 licenses have been sold since 1957.

Prior to 1970, Minnesota provided half of the global market supply of wild rice; most of which was from hand-harvested natural stands. As cultivation of wild rice increased, by 1990, natural hand-harvested wild rice in Minnesota accounted for less than 10% of the global supply of wild rice. Yet, hand-harvested wild rice remains a vital part of the state's tribal and local economies. In fact, the largest part of the economy revolving around wild rice is the "underground" economy. Much of people's manoomin harvest is gifted or traded and is never tracked in any organized fashion. There is very little accounting or tracking related to wild rice sales, spending, or harvest. Yet, aside from the cultural importance of the activities, this barter and trade system is also important to the economic wellbeing of harvesters by reducing food costs and improving food security.

As part of the Health Impact Assessment, Fond du Lac worked with Earth Economics to develop an economic benefits analysis describing the impact of seasonal manoomin harvest to the tribal and state economies. This analysis estimated impacts on economic activity, food security, and public health, and then estimated changes in those impacts as a result of potential decreases in wild rice productivity and abundance. While the report was not intended to establish any monetary value to the cultural significance of manoomin, recognizing that these values are beyond economic measure, it did make a strong economic case for protecting manoomin and thereby preserving these benefits for future generations.

The effects of wild rice harvesting ripple throughout the economy in obvious and less obvious ways. Some harvesters sell a portion of the wild rice they gather for obvious economic gain. But additional contributions stem from the costs to undertake harvesting, such as gas, drying tarps, or canoes. Those expenditures support other sectors in the Minnesota economy, like retail and service. Wild rice also supports the Minnesota economy in other, less obvious ways. Conservation agencies, tribes, and other groups and organizations invest enormous amounts of money in ecosystem restoration projects that rely on native wild rice as an important plant; and due to their magnetism for waterfowl, wild rice waters serve as popular hunting grounds. According to the 2006 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation, waterfowl hunters contributed more than 43 million dollars ($43,000,000) to the Minnesota economy. Although hunting numbers on wild rice waters are currently unknown, Ducks Unlimited suggests that no other habitat sees such high concentrations of

waterfowl. The shared value that so many Minnesotans place on wild rice habitat is reflected by the widespread efforts of hunting clubs, private citizens, and conservation groups to seed and expand it.

Cultivated wild rice and breeding at the University of Minnesota

(Provided by the Minnesota Cultivated Wild Rice Council)

Cultivated wild rice is one of the most recently domesticated crops. Domestication and cultivation of wild rice in Minnesota had several early pioneers, but its origins can be traced back to 1950. James Godward, a Minnesota resident, grew up enjoying wild rice. While he was in the service during World War II, he saw farmers cultivating white rice in India. This scene stayed in his mind, and in 1950 he and his brother Gerald decided to experiment with growing wild rice on an acre near Merrifield, Minnesota.

The Godwards constructed dikes, added ditches for drainage and put in water controls. In the fall they tilled the soil, and the next spring they obtained fifty pounds of seed from Wildlife Nurseries in Oshkosh, Wisconsin. The seed they obtained was the same type growing in lakes and rivers in Minnesota and Wisconsin. In the spring they scattered the seed, disced it in, and flooded the paddy. Much to their surprise, the seeds sprouted and produced a crop. The paddy was drained in the fall, and they harvested it by hand.

Their success prompted them to continue experimenting and expanding their production. As Godwards' production continued to grow, they invited Dr. Robert Robinson, an agronomist in the Department of Agronomy and Plant Genetics, University of Minnesota to see the wild rice and asked for any advice he could give them. At the time, the University did not have an active wild rice program; however, they held a conference at the St. Paul Campus to formulate a research plan. The plan was not funded; thus, no research was started. However, Dr. Robinson's interest continued.

The Godward experimentation continued to grow, especially with harvesting techniques. As they continued to improve their cultivating and harvesting success, other farmers tried their hand at growing wild rice.

As interest grew, Dr. William Hueg, Director of the University of Minnesota's Agricultural Experiment Station, and Dr. Herbert Johnson, head of the University of Minnesota's Department of Agronomy and Plant Genetics, became involved. They cooperated with the wild rice growers in obtaining necessary funds to begin research at the University of Minnesota, especially breeding. Dr. Ervin Oelke became a researcher and Extension agronomist in wild rice as well.

In 1969, there were approximately 5,000 acres of cultivated wild rice planted to unimproved, shattering varieties. Interest started growing to form a growers' association to address production and marketing issues. This led to the formation of the "Wild Rice Growers' Association," currently known as the Minnesota Cultivated Wild Rice Council (Council). In 1971, the Wild Rice Growers' Association was successful in obtaining the first recurring funds from the Minnesota Legislature for wild rice research at the University of Minnesota Agricultural Experiment Station which focused on breeding and production.

Cultivated wild rice improvements

Over the years, this research led to the development of many varieties which have dramatically improved the productivity of cultivated wild rice (during this same time native stands of wild rice continued to thrive in Minnesota). Varietal developments are shown in Table 1.

Improvements in cultivated wild rice varieties through traditional plant breeding methods have resulted in a significant economic impact in some of Minnesota's poorest counties.

Table 1. Wild rice varieties

Year	Cultivar
1978	*Netum*
1983	*Voyager*
1985	*Meter*
1992	*Franklin*
2000	*Petrowske Purple*
2001	*Itasca*
2007	*Itasca Cycle-12*
2008	*Dawn SR*
2013	*Barron*
2018	*Itasca-C20*
2023	*RayGun*

Economic impact

Minnesota's cultivated wild rice production is located in three growing areas in central and northern Minnesota. Minnesota's cultivated wild rice industry experienced significant growth during the 1970s and 1980s, when shatter-resistant wild rice varieties became more widely available in the state.

The Council contracted with the University of Minnesota Extension to conduct an economic contribution study. The analysis found Minnesota's cultivated wild rice industry contributed $58.4 million and 641 jobs to the economy in 2018.

Of the $58.4 million in economic activity, $25 million was the result of direct spending by the industry – farmers, processors, and marketers. Additionally, the industry stimulated an estimated $33.4 million in economic activity in other industries across the state. Farmers directly spent an estimated $10.5 million, processors $2.3 million, and marketers $12.2 million.

In 2018, Minnesota's cultivated wild rice industry supported 641 full- and part-time jobs in the state. Of this, the industry directly employed an estimated 481 people. Additionally, the industry supported 160 jobs in other industries across the state.

Collaborations between the cultivated wild rice industry and the hand harvested community

(Provided by Red Lake Nation)

Home of the Red Lake Band of Chippewa Indians (RNL) – is the fifth largest cultivated wild rice producer in Minnesota and a proud member of the Council. RNL does not view cultivated wild rice as a threat to native stands and the seed grown on RLN farm was developed by the University of Minnesota's cultivated wild rice breeding program. The cultivated wild rice produced by RLN is one of their most prosperous enterprises, and they have recently expanded their role in the cultivated wild rice industry.

In addition to working directly with RLN, the Council has collaborated with other tribes throughout the years, most notably:

- Joint promotional projects with the Council, tribes, and the Minnesota Department of Agriculture in hosting media tours from the late 1980s through late 1990s. The intent of these joint promotions was to bring awareness to Minnesota wild rice as a whole; both cultivated and hand harvested. This is an area where the Minnesota wild rice industry, cultivated and hand harvested, could join forces to reinstate.

- Minnesota labeling law was a joint effort with the Council and tribes to ensure wild rice being sold in Minnesota was properly labeled. Per State Statute, a package of wild rice must state whether it is cultivated or natural lake and river wild rice, it must have the place of origin (Minnesota, California, Canada), and if hand harvested but machine processed, it must state so. The law has had several improvements over the years by working collaboratively (1981, 1989, 1992, 1994, 2003). This is an area where the Minnesota wild rice industry, cultivated and hand harvested, could work together to get similar national legislation (no one should be misrepresenting their wild rice).

- Minnesota law protecting wild rice from genetic engineering implications (2007). If a permit to release genetically engineered wild rice is issued anywhere in the U.S., the Environmental Quality Board shall notify interested parties. Additionally, an environmental impact statement must then be conducted in Minnesota.

- Farm Bill language to help protect Minnesota from overproduction of wild rice anywhere in the U.S. was a collaborative effort between the Council and some of the Minnesota tribes (late 1980s). If wild rice is planted on base acres, a farmer's Title 1 payments are reduced for every acre planted to wild rice. This is currently being threatened and is an area the Minnesota wild rice industry, cultivated and hand harvested, need to work together.

- Minnesota Legislature directed a DNR study on wild rice that included potential threats to natural stands (2008). The Minnesota wild rice industry, cultivated and hand harvested, worked together with the DNR as stakeholders in the process of putting the report together. It was determined in the study that the traditional wild rice breeding program did not pose a threat to natural stands.

- University of Minnesota Wild Rice Advisory Group was established (2017) to bring together the Minnesota wild rice industry, cultivated and hand harvested, to periodically discuss research being conducted on wild rice. It was an opportunity for those in the industry to learn about work being done by researchers such as Dr. Jenny Kimball (cultivated wild rice breeding program) and Dr. Michael Dockry (working on natural wild rice stands).

- Minnesota has the largest cultivated wild rice and lake and river wild rice industries anywhere in the world. Wild rice is our State Grain. It is important research continues to support the Minnesota wild rice industry so cultivated growers, including Red Lake Nation, remain competitive with California and Canada. Additionally, research on natural lake and river wild rice needs to continue and be bolstered so this precious natural resource is viable for future generations. Natural stands in other states have diminished, but the decline is not due to cultivated wild rice; states like Michigan and Wisconsin do not have cultivated wild rice. Unlike these other states, Minnesota has invested heavily in our State Grain. The tribes, growers, and the state have all contributed. The two sides of the industry have coexisted since the 1950s and both have thrived – this needs to continue (Minnesota Cultivated Wild Rice Council, 2023).

The Wild Rice Breeding Program is a breeding, genetics, and conservation research program in the Department of Agronomy and Plant Genetics at the University of Minnesota. The Wild Rice Breeding Program's primary focus is on scientific research and the development of cultivated wild rice varieties. This research includes improving disease resistance, crop yield, and other agronomic traits. The program recognizes the importance of maintaining traditional wild rice stands while also enhancing cultivated varieties. The focus of the University's wild rice breeding research has been on:

- Varietal development
    - Seed viability
    - Disease and pest resistance
    - Reduced Shattering
    - Grain Quality Traits
    - Maturity uniformity
- Conservation research
    - Genetic biodiversity
    - Seed viability
    - Environmental Stressor Resilience
    - Phenotypic traits of different types
    - Predictive seeding of natural stands
- Genomic resources
- Seed sustainability
    - Viability of seed long-term
    - Maintain genetic diversity (seed banks)
    - Improve resiliency to environmental stressors
    - Microbial impacts on survivability

Methodology

Two in-person meetings were convened in the summer of 2023 with virtual options, and additional input from individual tribal consultation and/or written input was submitted to the tribal liaison. All meeting invitations offered written submission or individual meetings as alternative methods to provide input to accommodate schedules and communication preferences. An additional update was given at a virtual Weekly Tribal Leader's/Governor's Office Meeting. A draft report was sent to all parties to reflect what was discussed at the meetings and to provide an opportunity to dispute any discrepancies and/or submit supplemental comments in addition to a survey of potential recommendations.

Meetings

One meeting was held on July 24, 2023, and hosted by the Fond du Lac Band of Lakes Superior Chippewa at Otter Creek Event Center with representatives from eight of 11 tribes, 1854 Treaty Authority, University of Minnesota staff, Minnesota Department of Agriculture Commissioner and staff, and tribal wild rice harvesters and producers. The second meeting was held on August 8, 2023, at the University of Minnesota's North Central Research and Outreach Center with representatives from the Minnesota Cultivated Wild Rice Council, six of the

11 tribes, University of Minnesota staff, Minnesota Department of Agriculture Commissioner and staff, tribal wild rice harvesters and producers, and cultivated wild rice producers.

The Commissioner of the Minnesota Department of Agriculture also attended a Weekly Tribal Leader's/Governor's Office Meeting on October 19, 2023, to give an update on progress, assert commitment to meaningful input and engagement by offering individual meetings should tribes request, and to provide a timeline with deadlines to compile the report. In addition, the Commissioner took comments during this meeting.

Email

Background information was requested from the University of Minnesota, the Minnesota Cultivated Wild Rice Council and Minnesota Tribes. On November 21, 2023, an email was sent to participants with draft input language to review, a recommendations survey to fill out, and a reminder to make other recommendations or objections by December 18.

Input was received from the University of Minnesota, the Minnesota Wild Rice Council, Fond du Lac Band of Lake Superior Chippewa, Red Lake Band of Chippewa, and the 1854 Treaty Authority by December 18 and incorporated into the draft. The survey was completed on December 18 as well; though due to the lack of participation from many tribes, it is not representative of all parties. There were submissions from two tribes and the 1854 Treaty Authority. In addition, there were multiple submissions by seemingly related cultivated producers, potentially conflating results and rendering it inconclusive. Red Lake intentionally did not fill the survey out and conveyed that to the agency. However, substantial input gathered from the meetings and written input informed recommendations.

Throughout the process, intention was set upon transparency and communication. A clear timeline was communicated and multiple methods of engagement were used to ensure input was submitted in a timely manner to compile as comprehensive and representative of a report as possible.

Background sourcing

Background information was provided by both the Minnesota Wild Rice Council and the 2018 Tribal Wild Rice Taskforce Report (Minnesota Cultivated Wild Rice Council, 2023) (Minnesota Tribal Wild Rice Task Force, 2018).

Input

Tribal perspective

The tribes emphasized the cultural and spiritual importance of wild rice to their communities. They viewed wild rice as much more than a commodity, considering it integral to their heritage, traditions, and way of life. The importance of wild rice in tribal ceremonies, rituals, and cultural practices was highlighted. Tom Howes, Natural Resources Manager for Fond du Lac stated, "[You are] talking about this like it's a commodity – it's a gift, an entity and a being and it deserves as much respect as you and I do. To manipulate it, breed it, etc. is a bastardization of a gift. It was perfect" (Minnesota Department of Agriculture, 2023). The cultural significance to the tribes is profound and multi-faceted by being foundational to identity, integral to sacred ceremonies,

integrated into language and art and passed down through intergenerational tradition, a hallmark of natural resource stewardship, a symbol of generosity and community, a source of medicine and healing, and an assertion of food sovereignty. Tribes expressed wild rice as being inextricably tied to their identity as a culture.

Many tribes expressed a need for trust and mutual respect in their interactions with stakeholders. They stressed that trust is vital when considering collaborations that may impact wild rice. There was also hesitation and caution about embracing new initiatives, which was tied to building trust over time. The tribes expressed a significant lack of trust in their interactions with the State of Minnesota and the University of Minnesota. They believe that historical injustices and broken promises have eroded trust between tribal nations and these institutions. So much so, that the creation of a Minnesota Tribal Wild Rice Task Force, and its subsequent 2018 report, "serves as a response to the 40th Governor of the State of Minnesota creating a "Wild Rice Task Force" that is disrespectful and contrary to Executive Order 13-10 … and directly relegates the Tribes to the status of special interest groups and industry rather than honoring Tribal sovereignty (Minnesota Chippewa Tribe Resolution 107-18)." (Minnesota Tribal Wild Rice Task Force, 2018)

The tribes stressed building trust as essential for effective communication. Frustration over the perceived lack of collaboration and engagement is linked to this trust deficit. Tribes feel that they have not been genuine partners in decisions affecting wild rice and their lands. Tribal representatives emphasized the need to build trust through meaningful and respectful dialogue. They see trust as a foundation for any productive collaboration between the tribes, the state, and the university. Tribes stressed the importance of long-term collaboration rather than treating these meetings as isolated events. They advocated for a commitment to building ongoing relationships to address the complex issues surrounding wild rice.

An important aspect of building trust is cultural sensitivity. Tribes expect the state and the university to recognize and respect the cultural and spiritual significance of wild rice to their communities. Collaboration also implies cooperative decision-making. The tribes seek a more significant role in decisions affecting wild rice, as well as involvement in setting research priorities and policy. Trust and collaboration are reinforced when all parties share common goals. Tribes want the state and the university to understand and prioritize their objectives and concerns related to wild rice. Rebuilding and strengthening relationships is seen as an important first step in improving communication. Tribes believe that this will lead to a more productive dialogue on issues such as wild rice preservation and management. Trust needs to be rebuilt through cultural sensitivity, long-term commitment, and a focus on shared goals, ultimately leading to more collaborative decision-making processes that honor the tribes' cultural and spiritual connection to wild rice.

While emphasizing the unique value of wild rice to their communities, the tribes expressed willingness to work together with cultivated wild rice growers, government agencies, and academic institutions. They acknowledged the interconnectedness of cultivated and natural wild rice and recognized that threats to one group also affects the other. The tribes, however, were cautious about these collaborations and stressed the importance of ensuring that their tribal sovereignty, interests, expertise, and cultural values are understood and respected.

Several tribes voiced concerns about potential changes in federal legislation, particularly those from California, that could impact the wild rice market and potentially pose threats to the livelihoods of tribal wild rice harvesters. They expressed the need to remain vigilant and to work collectively to protect their interests. Grand Portage also expressed concern over any additional regulatory oversight by the Minnesota Department of Agriculture and stressed working with the Minnesota Pollution Control Agency regarding water quality issues.

During the meetings, there were several specific issues that many, but not all, tribes expressed strong views about. Some of these include genetic engineering, hybridization, breeding, industry and environmental impacts, and the misrepresentation of cultivated wild rice as “wild.” Some of these issues are directly related to the breeding program, and some are indirectly related to the overall topic of wild rice.

Most tribes voiced strong opposition to the genetic engineering, hybridization, and/or breeding of wild rice, excluding Red Lake Nation. Many tribes emphasized that they do not support breeding wild rice and that any research or developments related to breeding should be approached with great caution. They argued for stringent regulations and an environmental impact assessment for any wild rice varietal development proposals. They also requested that any wild rice genomes not be published for others to utilize for breeding purposes.

The tribes consistently emphasized the cultural significance of wild rice to their communities. They sought strong protections for wild rice and its natural habitats, including measures to maintain water quality and conserve the natural stands. They also expressed concerns about the potential environmental threats to natural stands of wild rice including, but not limited to, climate change, brown spot, and invasive species such as common carp.

Tribes were also concerned about the mislabeling of cultivated wild rice and the potential competition from producers outside of Minnesota, particularly California. They were mainly concerned with labeling cultivated wild rice as “wild,” as they are varieties achieved through breeding processes and purposeful cultivation. The argument was made that the mislabeling of cultivated wild rice is a misrepresentation of facts, leads to an unfair advantage in the marketplace and removes the ability for consumers to make a fair and educated choice. Currently, labeling is at the Commissioner of Agriculture’s discretion and subject to change. They sought permanent support in preventing mislabeling of wild rice products in the market and for public education on the difference between natural and cultivated wild rice to provide a fair market. They also raised the issue of protecting natural wild rice varieties from commercial cultivation.

In summary, these were some of the key issues that the tribes were strongly against, and they made it clear that these concerns should be addressed in any legislative actions or policy changes related to wild rice. The tribes emphasized that wild rice is not just an economic resource, but a vital component of their culture and traditional way of life that needs to be protected. Their perspective highlighted the importance of environmental stewardship and the need for mutual trust and respect in any collaborative efforts regarding wild rice. They also expressed concerns about potential threats to the wild rice market, making it crucial to work together to protect their interests. Also expressed and recognized is the importance to consider individual tribes’ perspectives as they are unique and may differ (Minnesota Department of Agriculture, 2023).

Cultivated wild rice producer/Minnesota Wild Rice Council perspective

Wild rice producers, including cultivated wild rice growers and Red Lake Nation, emphasized the economic importance of wild rice. These benefits included income generation, sustaining farm operations, and contributing to the local economy. The producers showed strong support for traditional breeding programs for wild rice and desire to keep funding for the wild rice breeding program. They noted that these programs were essential to their industry and encouraged the continuation of such efforts. They expressed a desire to preserve traditional breeding methods and practices. Producers talked about the efficient utilization of resources,

including funding from programs like the Agricultural Research, Education and Extension Tech Transfer program (AGREETT) at the University of Minnesota.

Producers expressed a willingness to collaborate with tribes, government agencies, and academic institutions. They acknowledged the interconnectedness between cultivated and natural wild rice, recognizing that threats to one group, such as invasive species or environmental changes, could impact the other. They emphasized the need for collaborative efforts to address shared challenges. Producers recognized the need for trust and respect in their collaborations with tribes and stakeholders. They emphasized the importance of understanding each group's perspectives and interests and working together with mutual respect.

The producers expressed concerns about competition, particularly from other regions like California, where cultivated wild rice is produced. They highlighted market challenges, such as mislabeling and potential threats from changes in legislation, which could impact their ability to compete effectively. The Minnesota Wild Rice Council, representing wild rice producers, indicated that they were involved in discussions related to legislation and policies that could impact wild rice, particularly the Farm Bill and issues regarding labeling and competition from other regions.

Sustainability was a key concern for producers, including the preservation of natural stands of wild rice and the development of strategies for long-term sustainability, especially in the face of environmental changes. Wild rice producers acknowledged their role in environmental stewardship. They highlighted practices such as careful water management, which not only benefited their crops but also had positive environmental impacts. They demonstrated a commitment to maintaining the quality of water and ecosystems where wild rice grows. Peter Imle, Chair of the Minnesota Cultivated Wild Rice Council, stated, “Most often things that are bad for natural stands are bad for cultivated wild rice stands; that’s foundational and we can start with that.” (Minnesota Department of Agriculture, 2023).

In summary, wild rice producers placed significant importance on the economic aspects of wild rice cultivation and recognized their role as environmental stewards. They showed a willingness to collaborate, especially in areas where interests overlapped. Market competition and challenges, preservation of traditional breeding methods, and concerns about resource allocation were also key points in their perspectives. Overall, their perspective highlighted the value of wild rice as both a cultural and economic resource and supported continuation of funding for the wild rice breeding program (Minnesota Department of Agriculture, 2023).

University of Minnesota perspective

The University of Minnesota acknowledged the economic and cultural value of wild rice. They recognized the role wild rice plays in tribal culture, tradition, and food sovereignty; they also acknowledged its economic importance to the state and local communities.

The university highlighted its commitment to research and academic work related to wild rice. They stressed the importance of scientific research, genetics, conservation in natural stands, improved understanding of water quality and environmental impacts on natural wild rice. This also includes cultural and economic impacts of all affected and other scholarly endeavors in understanding and improving cultivated wild rice.

The university stressed transparency and open communication with all parties, including tribes, wild rice producers, and government agencies. They were open to feedback and collaboration in their research and

outreach efforts. The university recognized the significance of collaborating with tribal communities and governments. They expressed a willingness to work closely with tribes, especially in research and conservation efforts, emphasizing the importance of respecting tribal knowledge and traditions. Efforts have included development of “Guidelines for Indigenous Research” and development of several consultative and partnerships to address issues of both tribes and cultivated rice growers. This has included the Nibi and Manoomin Symposium, the Wild Rice Advisory Group (University, growers, and tribal representatives), and “First we must consider Manoomin” program connecting University researchers and educators to tribal members.

During the meetings, the University of Minnesota acknowledged the need to improve communication and collaboration with tribal communities. They recognized that in the past, there have been challenges in establishing and maintaining communication with tribes. With the legislative funding for wild rice research, the university initiated a Wild Rice Advisory Group that invited tribal, university and cultivated wild rice growers to joint discussions to better engage all parties with interest in wild rice research. There are also efforts in manoomin conservation with tribes and water quality research in preserving and protecting natural stands. This includes the “First we must consider Manoomin/Psin” collaboration and the Nibi Manoomin Symposium supported by the College of Food, Agricultural and Natural Resource Sciences. However, they expressed their commitment to enhancing this aspect of their work.

The university discussed the allocation of resources, specifically mentioning funding from programs like AGREETT. They expressed a need for careful allocation of resources to ensure that research and conservation efforts were adequately supported. Removal of AGREETT funding for wild rice research would remove any funding the university has in support of cultivated wild rice research. However, employees may continue research in this area based on scholarly interest or other research funding they may receive.

The university emphasized the importance of environmental stewardship, particularly regarding the health of wild rice ecosystems and natural stands. They underscored the role of research in understanding and preserving these ecosystems. The University recognized the challenges posed by invasive species, environmental changes, and water quality. They discussed their efforts to research and address these challenges, with the aim of ensuring the long-term sustainability of wild rice.

In summary, the University of Minnesota's perspective revolved around their role as a research and education institution and their commitment to studying and conserving wild rice. They recognized the cultural, economic, and environmental significance of wild rice and emphasized the importance of collaboration with tribes and stakeholders. Their discussions also touched on resource allocation, environmental challenges, and the need for effective communication and collaboration in addressing wild rice-related issues with tribes (Minnesota Department of Agriculture, 2023).

Wild Rice Breeding Program perspective

The Wild Rice Breeding Program recognizes that wild rice is not merely an agricultural product but holds deep cultural and spiritual importance for Indigenous communities. They are sensitive to these cultural values and are committed to working in a manner that respects and preserves this significance. While the primary focus is on scientific research, the program is aware of the economic impact of wild rice on both cultivated and natural stands. There is an interest in understanding and contributing to research that assesses the economic implications and environmental factors of wild rice for tribal communities and cultivated producers.

The program aims to communicate its research findings and methodologies to the public and stakeholders. They have created a website to disseminate information and maintain transparency about their work, and the primary cultivated wild rice researcher maintains a current website on all research. The program has made efforts to collaborate with tribal communities and Indigenous people. The research team seeks to understand wild rice from both a Western scientific perspective and the traditional, cultural perspectives of tribes. Collaboration with tribal representatives is an important aspect of their work.

The University shared its intentions to establish better channels of communication with tribal representatives, ensuring that they have access to the relevant information about their research and initiatives. This reflects their willingness to engage with tribes more effectively and address concerns and feedback, ultimately fostering a more productive and collaborative relationship.

The program acknowledges the significance of environmental factors such as climate change, water quality, and habitat protection for wild rice. Their research touches upon topics like seed viability and genetic diversity within populations, which can directly impact the environmental health of wild rice habitats.

The program is open to input and questions from various stakeholders, and tribal representatives, cultivated wild rice growers, and state agencies. They have provided avenues for individuals and organizations to submit questions and comments related to their work.

In summary, the Wild Rice Breeding Program is focused on scientific research but is working to balance the preservation of wild rice's cultural significance and environmental health. They aim to collaborate with tribal communities, cultivated wild rice growers and others, ensuring transparency and open communication about their research and its implications. They recognize the importance of addressing economic and environmental impacts and are committed to working in ways that honor the cultural value of wild rice to Indigenous communities (Minnesota Department of Agriculture, 2023).

Areas of Agreement and Disagreement

Areas of agreement:

- All parties agreed on the need for collaboration and communication. They recognized that working together was essential for the protection and promotion of wild rice.
- There was unanimous agreement across all attendees, including the University of Minnesota, tribes, and wild rice producers, on the cultural and environmental importance of wild rice. Both tribes and wild rice producers recognized the deep cultural and spiritual significance of wild rice, and the University of Minnesota and tribes acknowledged its environmental value as a sign of ecosystem wellness.
- There was a shared understanding of the importance of research and preservation efforts for wild rice. The University of Minnesota highlighted its commitment to research and education in conservation of natural stands and the environment, while tribes and wild rice producers expressed an interest in conserving and preserving natural stands. Attendees from all groups acknowledged the significance of maintaining good water quality and the overall health of ecosystems in relation to wild rice. They discussed the impacts of invasive species and environmental changes on wild rice.

Areas of disagreement:

- The parties differed in their perspectives on the future of the Wild Rice Breeding Program. Cultivated wild rice producers expressed an interest in traditional breeding to remain competitive with California. However, California has become less competitive due to water availability issues decreasing the feasibility of crops. The proposed California legislation to amend specialty crop funding, primarily benefiting California, could further erode their competitiveness.

- The University of Minnesota was more research-focused and discussed a broader approach that is focused on conservation, traditional cross breeding of wild rice for select traits, consideration of impacts of breeding programs on natural stands to assure they are not harmed and the impacts of environmental stressors, invasive species, pathogens impacting wild rice and other challenges to both cultivated and natural stands. Another focus of the breeding program has been seed preservation methods to ensure viability into the future.

- Several tribes stressed that breeding and exploring seed preservation is not necessary as natural stands already preserve the biodiversity needed to ensure future success, especially in the face of climate change. Research conducted by the University of Minnesota LacCore Lab, in collaboration with the Fond du Lac Band of Lake Superior Chippewa, established initial findings showing the viability of natural wild rice beds as potential seed banks.

- In addition, most tribes viewed the breeding program as posing a risk to natural wild rice by way of genetic drift from cultivated wild rice stands, arguing that existing research is not sufficient to conclude that genetic drift does not occur. This excludes Red Lake Nation, who expressed that breeding poses no threat. The UMN Wild Rice Breeding Program has conducted an initial drift research project and concluded that it does not occur, while several tribes assert the project did not have a representative sample and was not sufficient and more research is required before coming to that conclusion.

- There was a divergence in perspectives on conducting an economic impact analysis of wild rice. Some tribes and wild rice producers highlighted its importance, while all parties emphasized the cultural and environmental aspects. The economic significance of wild rice appeared to be interpreted differently by different parties. Red Lake expressed a desire to explore further discussions regarding an economic impact analysis of wild rice, potentially requiring more funding for both AGREETT and tribal research. Fond du Lac Water Projects Coordinator, Nancy Schuldt expressed that some of this work has already been completed and provided their 2018 report “The Food that Grows Out of the Water – The Economic Benefits of Wild Rice in Minnesota,” which contains important data and analysis relating to both tribal and state harvesters and provides important socioeconomic modeling scenarios that tie together economic and health benefits. While Bois Forte Secretary Treasurer Tara Geshik and Shakopee Mdewakanton Sioux Community Cultural Outreach Coordinator Cyndy Milda expressed concern that solely placing a monetary value on wild rice fails to encompass the cultural and traditional values and resources wild rice provides to many tribes. Beth Nelson, President of the MN Cultivated Wild Rice Council, stated that they have completed an economic impact analysis but that it did not include cultural components that the tribes brought forward (Minnesota Department of Agriculture, 2023).

- There appeared to be some disagreement regarding the allocation of funding, particularly with respect to wild rice breeding. Wild rice producers expressed concerns about funding being diverted from wild rice programs, while the University of Minnesota emphasized the importance as a public institution of being inclusive of research and education of interest to diverse groups that requires of careful resource allocation. Most tribes expressed disagreement with the program funding altogether, while some saw benefits in re-allocations, and still Red Lake supports continuing the breeding program funding. Red Lake Nation's wild rice came from the very breeding program in question. The wild rice produced by Red Lake Nation represents one of their most prosperous enterprises and they have recently expanded their role in cultivated wild rice, so not only does it provide food security, but it also provides economic security.

- Disagreement occurred regarding the labeling of wild rice. Most tribes shared concerns over cultivated wild rice being labeled as "wild" since it is cultivated and not natural stand wild rice. Several participants support changing wild rice labeling laws to provide consumers with clearer information about the origin and type of product. Advocates argue that accurate labeling can help consumers make informed choices, differentiating between natural stand, hand-harvested, culturally significant wild rice, and commercially cultivated varieties. They contend that such labeling can protect the cultural heritage of Minnesota's tribes, ensure fair market competition, and promote the conservation of natural stands of wild rice by valuing their uniqueness. Additionally, supporters see labeling changes as an opportunity to enhance consumer trust and the authenticity of products in the market. Cultivated wild rice producers were not in support as reflected in the survey results.

While there was a general agreement about the importance of collaboration with government agencies and policymakers, there may be differing views on specific regulations and policies related to wild rice conservation, labeling, and competition from other regions.

In summary, while there was substantial agreement on the cultural and environmental significance of wild rice and the need for collaboration and increased communication efforts, there were areas of disagreement regarding the allocation of funds, the future direction of breeding programs, the interpretation of economic impact and the desire to complete one, and specific regulations and policies. These areas of agreement and disagreement highlight the complex nature of discussions around the management and preservation of wild rice in Minnesota.

Considered Actions

The following considerations are based upon input from all parties. As noted, there were several topics that all parties agreed on, several where there was partial agreement, and still more with significant disagreement. There are options from the survey included, though the results are inconclusive as it was not completed by all parties. There are actions included based on input that are outside report requirements in statute but are included as they are related to the overall topic of wild rice. These are denoted with an (*).

Full agreement

- **Increase communication efforts between the University of Minnesota and the tribes:** The University of Minnesota should increase efforts to ensure involvement of tribal representatives in decision-making processes. Not all tribes are the same and may have differing views, and thus is crucial to engage all interested tribes. Create opportunities for their input and ensure that their perspectives are included in discussions about wild rice management and preservation, whether that be ensuring tribal involvement of existing Wild Rice Advisory Committee at the University of Minnesota, using an alternative existing structure like the Minnesota Tribal Wild Rice Task Force, or creating a new framework. A new framework could create a board/council focused on wild rice that all agencies and entities in Minnesota must answer to regarding anything that impacts wild rice. The latter could be structured with voting members as state agency commissioners that regulate wild rice and/or are responsible for stewardship or conservation (MDA, MNDNR, MPCA) and tribal leaders/representatives from all 11 tribes. An advisory council to the voting board/council could comprise, University of Minnesota representatives, MN Cultivated Wild Rice Council representatives, harvesters, cultivated producers, processors, elders, experts, and other stakeholders. Though there is full agreement on the goal of increasing communication with tribes, there is not agreement on the approach.
- **Environmental stewardship and conservation:** All parties, including the University of Minnesota, recognize the importance of maintaining water quality, protecting ecosystems, and combating invasive species to support the health of wild rice stands. Legislative actions might include supporting programs to address these environmental factors that affect wild rice. Proposals to support conservation projects that aim to preserve the genetic diversity of wild rice and protect natural stands could be considered. These projects would ensure the long-term viability of both cultivated and natural wild rice, and its cultural and economic importance.
- **Wild rice and cultivated wild rice education:** In response to the concern raised by several tribes regarding the confusion of natural stand wild rice and cultivated wild rice by consumers, there is potential for more education. Advocates argue that accurate representation can help consumers make informed choices, differentiating between hand-harvested, culturally significant wild rice and commercially cultivated varieties. There was no opposition voiced during meetings nor submitted in written response.

Partial agreement

- **Cultural and economic impact studies:** In response to the differing viewpoints on the economic significance of wild rice, there may be a call for more discussion regarding comprehensive studies to assess the cultural and economic impact of wild rice on tribes and Minnesota as a whole. This information can help inform future policy decisions. Bois Forte and Shakopee expressed strong disagreement and should be considered in decision-making. As noted above, Fond du Lac has completed an economic, ecological, and health impact study that may be considered sufficient or the basis for a more comprehensive study.

Disagreement

- **Continue Wild Rice Breeding Program:** The cultivated wild rice producers, including Red Lake, support the breeding program. Supporters of the wild rice breeding program argue that it's essential for preserving genetic diversity, increasing yields, and meeting the growing market demand for this culturally significant crop. They emphasize the importance of maintaining traditional practices and involving tribes to ensure cultural sensitivity in the breeding efforts. Overall, these supporters view the program as a sustainable means to enhance economic viability and safeguard the resilience of wild rice.
- **Eliminate Wild Rice Breeding Program:** Opponents of the Wild Rice Breeding Program include Fond du Lac, Grand Portage, Shakopee, and Bois Forte. White Earth and Leech Lake did not comment. Based on other input given, it is assumed they support eliminating the breeding program. Red Lake was the only tribe that opposed eliminating the breeding program. The perspective arguing to prohibit breeding wild rice is rooted in a commitment to cultural preservation, environmental conservation, genetic diversity, and the sustainability of traditional foraging practices. It prioritizes the protection of wild rice's natural and cultural integrity.
- **Appropriate Wild Rice Breeding Program at existing funding levels:** Those who support the continuation of the Wild Rice Breeding Program also support funding at existing levels.
- **Increase Wild Rice Breeding Program funding:** Cultivated producers and some tribes saw value in utilizing increased funding for breeding or other purposes, such as for the preservation and conservation of natural wild rice stands, education of natural stand wild rice and cultivated wild rice, and/or economic impact analyses.
- **Eliminate funding Wild Rice Breeding Program:** Some tribes who oppose the Wild Rice Breeding Program and support its elimination also support the elimination of funding. While others saw value in utilizing the funding for other purposes, such as for the preservation and conservation if natural wild rice stands or economic impact analyses. It is important to note that eliminating the funding does not necessarily stop breeding activities or eliminate the breeding program.
- **Appropriate funding for environmental conservation and preservation rather than breeding:** Some parties advocate for prioritizing funding towards environmental conservation and preservation efforts rather than allocating resources to the wild rice breeding program. They argue that conserving the existing natural stands of wild rice is paramount for preserving the plant's genetic diversity, cultural significance, and ecological role. They believe that supporting conservation initiatives, such as protecting natural habitats, improving water quality, and preventing habitat degradation, can be more effective in safeguarding this vital species and its associated ecosystems, which would benefit both tribal communities and the environment. This could include appropriating funding to tribes or Kawe Gidaa-naanaagadawendaamin Manoomin/Psin Project within the University of Minnesota for environmental research.
- **Temporarily suspend breeding activities:** Temporarily suspending breeding activities until more discussion regarding analyses are conducted is a compromised approach. Analyses can include more robust and definitive research regarding genetic drift and impact analyses which may include economic, health, cultural, etc.
- **Prohibit any organized breeding research without consent of tribes*:** Several tribes expressed concern over any breeding activities without the consent of tribes. Cultivated wild rice producers and Red Lake Nation do not support this approach.

- **Amend wild rice labeling requirements*:** Several tribal perspectives support changing wild rice labeling laws to provide consumers with clearer information about the origin and nature of the product. Advocates argue that accurate labeling can help consumers make informed choices, differentiating between hand-harvested, culturally significant wild rice and commercially cultivated varieties. They contend that such labeling can protect the cultural heritage of tribal communities, ensure fair market competition, and promote the conservation of natural stands of wild rice by valuing their uniqueness. Additionally, supporters see labeling changes as an opportunity to enhance consumer trust and the authenticity of products in the market. Whether this applies to interstate commerce should be considered since some importation from California occurs. Cultivated wild rice producers and Red Lake Nation do not support this approach.

Conclusion

In conclusion, the debate over the continuation of the breeding program for wild rice in Minnesota reflects a delicate balance between efforts to enhance economic opportunities and preserve cultural traditions, while also addressing concerns about genetic integrity and environmental impacts. The outcome of this debate will likely depend on finding a middle ground that respects both ecological and cultural values. While there was substantial agreement on the cultural and environmental significance of wild rice and the need for collaboration and increased communication efforts, there were areas of disagreement regarding the allocation of funds, the future direction of breeding programs, the interpretation and analysis of economic impact and the desire to complete one, and specific regulations and policies. These areas of agreement and disagreement highlight the complex nature of discussions around the management and preservation of wild rice in Minnesota. Throughout the process, intention was set upon transparency, communication, inclusion, and a balance of interests, which was achieved with the time allotted: however, more time may be needed for collaboration on certain topics.

Resources

- Minnesota Cultivated Wild Rice Council (mnwildrice.org)
- 2018 Tribal Wild Rice Taskforce Report, PDF (mnchippewatribe.org)
- THE FOOD THAT GROWS OUT OF THE WATER: The Economic Benefit of Wild Rice in Minnesota, PDF (fdlrez.com)
- TRUTH Project (mn.gov)
- Wild Rice Breeding Program| Kimball Lab (umn.edu)
- Kawe Gidaa-naanaagadawendaamin Manoomin – First we must consider Manoomin / Psiŋ (wild rice) (umn.edu)
- Nibi Manoomin Symposium | College of Food, Agricultural and Natural Resource Sciences (umn.edu)

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