

Protecting the Harvest:
A survey of Minnesota state-permitted (non-tribal)
wild rice harvesters



A Final Technical Report

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University of Minnesota, St. Paul Minnesota
Kawe Gidaa-naanaagadawendaamin Manoomin
[First We Must Consider Manoomin/Psin (wild rice, Ojibwe/Dakota)]
Research Collaboration
<https://manoominpsin.umn.edu>

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The survey questionnaire or any data analyzed or reported as part of the survey project do not constitute a claim concerning the location, boundaries, scope or use of wild rice waters as either designated or existing uses. The wild rice waters identified in this survey effort do not constitute a wild rice waters determination list and shall not be used as such in any Tribal, State or Federal legal proceedings.

Study Background and Methods

Manoomin (Ojibwe) or Psii (Dakota) (wild rice, *Zizania palustris*) holds great cultural, ecological, and economic importance. It is Minnesota's state grain and to the Anishinaabe tribes across the Great Lakes it is a sacred food, medicine, and gift from the Creator. Indigenous peoples have been harvesting Manoomin in the Great Lakes region for millennia. Within present-day Minnesota, hand-harvesting natural wild rice has also become an important tradition to non-tribal members; non-tribal harvesting requires a Minnesota harvesting permit. Despite its importance, the plant's range has declined dramatically (Drewes & Silbernagel, 2012). Land use change, altered hydrology (Atkins et al., 1987), and nutrient pollution (Myrbo et al., 2017) are among the threats identified by scientists. Tribal elders, natural resource managers, and harvesters have observed many other relationships that affect Manoomin health including competing vegetation, harvesting practices and climate change (Fond du Lac Band of Lake Superior Chippewa, 2018).

To address these challenges, a unique research collaboration including tribes, inter-tribal organizations, and the University of Minnesota (UMN) was formed in 2017 with a core commitment to prioritizing tribal knowledge, perspectives, and needs in research and engagement. The project, given the Ojibwe name Kawe Gidaa-Naanaagadawendaamin Manoomin/Psii (First We Must Consider Manoomin) by members of the Fond du Lac Band of Lake Superior Chippewa, has since expanded to include participants from 9 tribes, 5 tribal natural resource agencies, and 2 inter-tribal organizations, as well as 20 student researchers.

As part of its work, the partnership seeks to better understand the Manoomin harvest from the perspective of non-tribal wild rice harvesters and to monitor harvesting practices over time. Harvesting among non-tribal, Minnesota permit holders has decreased dramatically since the 1960s. More than 16,000 Minnesota wild rice harvesting permits were sold in 1968 (Minnesota Department of Natural Resources [MN DNR], 2008); in 2018 fewer than 1,400 permits were sold (MN Department of Natural Resources [MN DNR], 2018).

This report describes the findings of a survey of Minnesota state-permitted harvesters that inquired about their values, beliefs, and behaviors associated with wild rice harvesting, processing, and protection. Tribal members, who are not required to obtain harvesting permits, were not surveyed. The purpose of the survey was to better understand non-tribal harvester perspectives and practices in present-day Minnesota. The decision to conduct a survey of state-permitted harvesters was driven by project tribal and inter-tribal organization partners. A questionnaire was developed in collaboration with partners. Research protocol was reviewed by UMN's Institutional Review Board. Individual questions were adapted from surveys conducted by Great Lakes Indian Fish and Wildlife Commission and Minnesota DNR (2008). A survey packet including a cover letter (Appendix A), questionnaire (Appendix B) and postage-paid return envelope were mailed to 1,339 state permit holders (2018 MN DNR database) in three waves during March through June 2019, following strategies for improving response rates (Dillman, 2009). Response was strong; 672 individuals responded for a 53% response rate.

Summary of Select Findings

Select findings from the survey analysis are presented below in a narrative and in a research summary report (Appendix C). More comprehensive results are presented in tabular form.

Findings from the survey indicate that 76% of state-permitted harvesters identify as male and 23% as female (1% identify as non-binary/gender non-conforming). The majority of respondents identify as

White (97%) or American Indian/Alaska Native (6%). In 2018, the median age of state-permitted harvesters was 59 years old. On average, respondents had riced for 14 years. Respondents harvested an average of 139 pounds of unprocessed rice, though the standard deviation was high. Individual harvests ranged from 0 to 3,100 lbs. The 2018 total harvest reported by 672 respondents was more than 83,000 pounds unprocessed. On average, survey respondents rated the 2018 wild rice “crop” as “poor to fair” in amount and “fair” in quality. On average, respondents reported keeping two-thirds (64%) of their harvest for their own use, sharing 28% with others, and selling about 8% of their harvest. Though more than 83% of respondents overall do not sell any of their harvest. Half of respondents (49.5%) use a commercial processor to process their harvested rice, while 23% process their own rice and 16% have a family member or friend process their harvest.

A vast majority of respondents (80%) believe wild rice needs better protection and 87% support enforcing existing water quality regulations to protect wild rice. More than four-fifths (85%) support expanding wild rice restoration programs such as reseeded or managing water levels. Meanwhile 80% support increasing monitoring of wild rice plants and waters; 80% support using Minnesota state harvesting permit fees for wild rice stewardship activities only; and 76% support expanding education and outreach programs to raise awareness about the ecological, nutritional, and cultural values of wild rice. Three-quarters of respondents support coordinating wild rice habitat conservation efforts between tribal, state, and local entities. Nearly the same percentage (73%) support conducting more research on wild rice.

Survey Findings

Table 1. Respondents' sociodemographic characteristics

Sociodemographic characteristics		N	Percent
Gender Identity	Male	506	76.3
	Female	153	23.1
	Non-binary/gender non-conforming	4	0.6
	Other	1	0.2
Age	Mean	54.8	-
	Median	59.0	-
	Minimum	19	-
	Maximum	84	-
Education	Did not finish high school	8	1.2
	Completed high school	61	9.4
	Some college but no degree	80	12.3
	Associate degree or vocational degree	108	16.7
	College bachelor's degree	176	27.2
	Some college graduate work	39	6.0
	Completed college graduate degree (Master's or PhD)	176	27.2
Race & Ethnicity	White (For example, German, Irish, English, Italian, Polish, French, Swedish, Norwegian, etc.)	635	96.7
	American Indian or Alaska Native (for example, Minnesota Chippewa Tribe, Shakopee Mdewakanton Sioux, Navajo Nation, Mayan, Aztec, Nome Eskimo Community, etc.)	38	5.8
	Asian (For example, Chinese, Filipino, Asian Indian, Vietnamese, Hmong, Korean, Japanese, etc.)	5	0.8
	Some other race, ethnicity, or heritage (for example, Sami, Chippewa Indian, American, Indian)	4	0.6
	Hispanic, Latino, or Spanish heritage (for example, Mexican or Mexican American, Puerto Rican, Cuban, Salvadoran, Dominican, Colombian, etc.)	2	0.3
	Black or African American (for example, African American, Jamaican, Haitian, Nigerian, Ethiopian, Somalian, etc.)	2	0.3
Minnesota resident	Yes	629	96.8
	No	21	3.2
Household income	Under \$20,000	65	10.5
	\$20,000-\$49,000	136	21.9
	\$50,000-\$74,999	143	23.1
	\$75,000-\$99,999	115	18.5
	\$100,000-\$149,999	107	17.3
	\$150,000-\$199,999	27	4.4
	\$200,000-\$249,999	14	2.3
	\$250,000-\$299,999	3	.5
	\$300,000 or more	10	1.6

Source: 2018 Minnesota State Wild Rice Harvester Survey, Questions 21, 22, 23, 24, 25

Table 2. Respondents' reporting on whether they harvested wild rice outside of Minnesota in 2018

Response	N	Percent
Yes	15	2.2
No	657	97.8

Source: 2018 Minnesota State Wild Rice Harvester Survey, Question 1

Table 3. Respondents' reporting on where else they harvested wild rice

Response	N	Percent
Wisconsin	3	75.0
Ontario, Canada	1	25.0

Source: 2018 Minnesota State Wild Rice Harvester Survey, Question 1a

Table 4. Respondents' reporting on whether they harvested wild rice in Minnesota in 2018

Response	N	Percent
Yes	607	91.3
No	58	8.7

Source: 2018 Minnesota State Wild Rice Harvester Survey, Question 2

Table 5. Approximate pounds of wild rice that individual respondents harvested in 2018 in Minnesota (unprocessed weight).

N	Mean	Standard Deviation	Minimum	Maximum	Sum
603	138.7 lbs.	254.2 lbs.	0 lbs.	3,100 lbs.	83,633 lbs.

Source: 2018 Minnesota State Wild Rice Harvester Survey, Question 3

Table 6. Respondents' reporting on whether they sold unprocessed wild rice that they harvested in 2018 in Minnesota

Response	N	Percent
Yes	20	3.3
No	589	96.7

Source: 2018 Minnesota State Wild Rice Harvester Survey, Question 4

Table 7. Approximate pounds of unprocessed wild rice that respondents sold in 2018

N	Mean	Standard Deviation	Minimum	Maximum
17	585.4 lbs.	621.1 lbs.	10 lbs.	2,000 lbs.

Source: 2018 Minnesota State Wild Rice Harvester Survey, Question 4a

Table 8. Approximate pounds of 2018 wild rice (finished weight/weight after processing) that respondents processed or had processed in 2018

N	Mean	Standard Deviation	Minimum	Maximum
604	64.9 lbs.	100.0 lbs.	0 lbs.	1,200 lbs.

Source: 2018 Minnesota State Wild Rice Harvester Survey, Question 5

Table 9. Respondents' reporting on what they did or intended to do with their processed wild rice harvested in 2018 (n=543)

Response	N	Avg. percent*
Keep for personal use	529	63.6
Give away or share with others	380	27.5
Sell	90	7.5

Source: 2018 Minnesota State Wild Rice Harvester Survey, Question 5a

*What respondents did with their wild rice in averaged overall percent; (e.g., overall 90 or 16.9% of respondents reported selling some portion of their processed wild rice.)

Table 10. Respondents' reporting on problems they experienced in their 2018 wild rice harvest [n=672]

	Not a problem (Percent)	Slight problem (Percent)	Moderate problem (Percent)	Severe problem (Percent)
Having the time to go	46.5	23.0	21.8	8.7
Rice worms	41.7	33.5	15.7	9.2
Weather conditions	44.5	32.9	14.1	8.5
Knowing when to harvest	47.8	31.4	16.9	4.0
Knowing where to harvest	52.2	24.6	18.8	4.3
Water levels too high	64.5	13.9	11.2	10.5
Other harvesters damaging plants	61.5	24.7	9.4	4.3
Finding a wild rice processor	68.1	14.0	12.3	5.6
Other vegetation crowding out wild rice	65.6	22.1	9.7	2.5
The physical challenge of harvesting	63.6	26.0	9.1	1.3
Finding a partner	71.1	15.5	10.7	2.7
Too much harvesting pressure—over-harvesting	67.1	23.8	6.9	2.2
Water levels too low	78.4	12.5	6.3	2.7
Non-harvesters damaging plants (e.g., boaters, shoreland owners)	77.6	16.8	3.4	2.3
Wild rice plants eaten by other animals or waterfowl	78.2	17.6	3.7	0.5
Seeing other harvesters using improper techniques	82.3	12.2	3.0	2.5
Fungal brown spot disease	81.8	12.4	4.2	1.6
Seeing too many other harvesters on the water	78.6	17.7	3.1	0.5
The financial costs	85.4	9.7	4.5	0.5
Having the proper equipment to harvest	85.7	9.8	3.5	1.0
Knowing how to harvest	85.5	10.7	3.1	0.7
Finding a wild rice buyer	93.5	3.4	2.2	0.9
Too little harvesting pressure—under-harvesting	92.4	6.1	1.2	0.3
Having transportation to wild rice waters	95.3	3.7	0.8	0.2
Other* (n=104)	5.8	3.8	21.2	69.2

Source: 2018 Minnesota State Wild Rice Harvester Survey, Question 8

Numbers shown are percentage of respondents who selected each rating. Items are listed in descending order by overall means.

*Other comments are listed in Table 27.

Table 11. Respondents' rating of the amount of wild rice "crop" over the last three years [n=672]

Year	Very poor	Poor	Fair	Good	Very good
2018	24.1	27.8	25.1	18.8	4.2
2017	3.1	10.5	28.9	31.6	25.9
2016	5.1	11.3	30.8	40.5	12.3

Source: 2018 Minnesota State Wild Rice Harvester Survey, Question 9
Numbers shown are percentage of respondents who selected each rating.

Table 12. Respondents' rating of the quality of wild rice "crop" over the last three years? [n=672]

Year	Very poor	Poor	Fair	Good	Very good
2018	11.0	15.0	30.8	33.2	10.1
2017	3.3	7.0	24.7	40.3	24.7
2016	3.6	8.7	25.0	46.4	16.3

Source: 2018 Minnesota State Wild Rice Harvester Survey, Question 9
Numbers shown are percentage of respondents who selected each rating.

Table 13. Number of years respondents have riced including 2018.

N	Mean	Minimum	Maximum
663	14	0	65

Source: 2018 Minnesota State Wild Rice Harvester Survey, Question 10

Table 14. How respondents rated their knowledge about sustainable wild rice harvesting

Knowledge level	N	Percent
Not at all knowledgeable	34	5.1
Slightly knowledgeable	121	18.2
Moderately knowledgeable	296	44.6
Very knowledgeable	213	32.1

Source: 2018 Minnesota State Wild Rice Harvester Survey, Question 11

Table 15. Sources of information respondents use about wild rice and wild rice harvesting

Information Source	N	Percent
Family or friends	487	20.3
Word of mouth from other harvesters	463	19.3
DNR Hunting and Trapping Regulations Handbook	293	12.2
MN DNR website	280	11.7
1854 Treaty Authority website	190	7.9
Signage posted at lake access points	158	6.6
Local MN DNR staff	115	4.8
Great Lakes Indian Fish and Wildlife Commission website (GLIFWC)	80	3.3
Local media (e.g., radio, newspaper)	48	2.0
Tribal website	48	2.0
Social media sites	47	2.0
Rice chiefs or other tribal officials	41	1.7
Training or classes	29	1.2
Other*	120	5.0

Source: 2018 Minnesota State Wild Rice Harvester Survey, Question 12

*Other comments (option 12n) are listed in Table 28.

Table 16. The source of information that respondents feel would best provide them with information about wild rice in the future*

Information Source	N	Percent
MN DNR website	118	19.6
Family or friends	115	19.1
Word of mouth from other harvesters	86	14.3
DNR Hunting and Trapping Regulations Handbook	56	9.3
Local MN DNR staff	26	4.3
Signage posted at lake access points	22	3.6
Great Lakes Indian Fish and Wildlife Commission website (GLIFWC)	14	2.3
Training or classes	14	2.3
Local media (e.g., radio, newspaper)	8	1.0
Tribal website	6	1.0
Social media sites	5	<0.1
Other**	45	7.5

Source: 2018 Minnesota State Wild Rice Harvester Survey, Question 12o

*Respondents were asked to specify their top 3 information sources from the list provided in question 12

**Other comments are listed in Table 28.

Table 17. Respondents' views and beliefs about wild rice and wild rice harvesting

Beliefs	Strongly agree	Somewhat agree	Neither disagree nor agree	Somewhat disagree	Strongly disagree
Wild rice tastes good	90.0	8.7	0.1	0.1	1.0
Wild rice is a healthful food source	87.1	11.1	0.8	0	1.1
Wild rice is important to a healthy natural ecosystem	84.6	9.7	4.9	0	1.0
I enjoy harvesting wild rice	78.2	18.3	1.7	9.8	1.1
Eating wild rice harvested by hand is special to me	73.1	20.5	4.8	0.2	1.5
Being able to harvest wild rice means a lot to me	65.2	23.8	7.2	2.0	1.8
Harvesting wild rice strengthens my connection with nature	61.4	27.6	8.7	1.1	1.2
Wild rice and wild rice waters need better protection	60.9	19.2	14.7	2.7	2.5
Wild rice is an important food source for me	45.8	30.8	16.4	4.5	2.6
Harvesting wild rice is a way for me to take care of the natural world	32.2	30.1	29.6	3.8	4.4
Harvesting wild rice brings my family closer together	24.8	39.0	25.2	3.7	7.3
I feel that wild rice is a part of me	26.2	23.3	34.8	7.4	8.3
Wild rice is important to the region's economy	18.9	35.2	30.6	7.6	7.8
Many important family memories or traditions are tied to wild rice	26.0	27.8	26.8	8.3	11.1
I feel a sense of pride in my heritage when I am harvesting wild rice	22.3	15.6	46.8	4.2	11.1
I enjoy processing wild rice	20.2	11.8	53.1	7.9	7.0
Harvesting wild rice is an important way for me to express my rights and responsibilities	18.3	24.5	38.2	6.6	12.4
Harvesting wild rice brings my community closer together	15.3	23.3	43.9	7.4	10.0
Wild rice is central to my own identity	14.8	27.8	35.6	6.9	14.9
Wild rice is important to my community's economy	11.1	18.5	42.6	10.3	17.5
Wild rice is central to the preservation of my culture	9.7	14.1	44.5	10.9	20.8

Source: 2018 Minnesota State Wild Rice Harvester Survey, Question 13
 Items are listed in descending order by overall means.

Table 18. Respondents' degree of support or non-support for wild rice management actions

Actions	Strongly support	Somewhat support	Neither oppose nor support	Somewhat oppose	Strongly oppose
Enforcing existing water quality regulations to protect wild rice	67.6	19.3	8.8	1.7	2.6
Expanding wild rice restoration programs (e.g., reseeded, managing water levels)	56.5	28.9	10.7	1.8	2.1
Using Minnesota state harvesting permit fees for wild rice stewardship activities only	58.5	21.7	16.1	2.4	1.4
Increasing water quality regulations to protect wild rice	56.9	22.3	13.3	3.8	3.7
Increasing monitoring of wild rice plants and waters	47.0	33.2	14.0	3.2	2.6
Expanding education and outreach programs to raise awareness about the ecological, nutritional, and cultural values of wild rice	44.1	31.6	20.1	2.3	2.0
Coordinating wild rice habitat conservation efforts between tribal, state, and local entities	47.5	27.2	18.6	3.0	3.7
Expanding public and private partnerships to protect wild rice	40.4	33.7	19.8	2.7	3.3
Conducting more research on wild rice	39.5	33.1	21.5	3.4	2.6
Controlling water levels to sustain wild rice habitats	33.1	33.7	23.6	5.3	4.3
Determining harvest dates for specific waters based on wild rice readiness, rather than a set annual date (e.g., Aug 15) for all waters	33.6	30.4	16.7	9.0	10.2
Improving water access points for harvesters	21.2	27.3	34.8	10.9	5.8
Requiring harvesters to watch a short video on sustainable harvesting practices before receiving a state permit	11.2	27.6	23.6	17.4	20.2

Source: 2018 Minnesota State Wild Rice Harvester Survey, Question 14
 Items are listed in descending order by overall means.

Table 19. Respondents' age when they began harvesting wild rice

N	Mean	Median	Standard Deviation
657	36	34	17

Source: 2018 Minnesota State Wild Rice Harvester Survey, Question 15

Table 20. Who introduced respondents to wild rice harvesting?

	N	Percent
Friend	351	52.2
I learned on my own	137	20.4
Other family member	106	15.8
Parent	101	15.0
Spouse	56	8.3
Co-workers	35	5.2
Organized class or group	29	4.3
Other community member	28	4.2

Source: 2018 Minnesota State Wild Rice Harvester Survey, Question 16

Other responses included tribal elders, tribal members, books/magazines, McGregor Wild Rice Days "Other" responses are listed in Table 29.

Table 21. Have respondents introduced others to wild rice harvesting?

	N	Percent
Yes	476	71.3
No	192	28.7

Source: 2018 Minnesota State Wild Rice Harvester Survey, Question 17

Table 22. For those who have introduced others to wild rice harvesting, about how many people have they introduced?

Mean	Median	Standard deviation
9.34	4	48.32

Source: 2018 Minnesota State Wild Rice Harvester Survey, Question 17a

Table 23. How many times did respondents eat Minnesota natural wild rice in the past 12 months?

	Frequency	Percent
1-3 times a month	270	40.4
1-3 times a week	163	24.4
6-11 times	137	20.5
1-5 times	76	11.4
4 or more times a week	20	3.0
I did not eat Minnesota natural wild rice in the past 12 months	3	0.4

Source: 2018 Minnesota State Wild Rice Harvester Survey, Question 18

Table 24. Under which license(s) have respondents harvested wild rice?

	n	Percent
State	647	96.3
Non-resident	25	3.7
Tribal membership card/permit	23	3.4
Off-reservation permit	5	0.7
On reservation, non-Indian permit	2	0.3

Source: 2018 Minnesota State Wild Rice Harvester Survey, Question 19

Table 25. Percent of respondents who provided additional comments about wild rice harvesting or management

	Frequency	Percent
Yes	369	54.9
No	303	45.1

Source: 2018 Minnesota State Wild Rice Harvester Survey, Question 26

Table 26a. Respondents' additional comments (55% of respondents wrote in comments; comments are organized by theme)

HARVESTING ACCESS AND LOGISTICS
Access to Information
<i>Training</i>
<ul style="list-style-type: none"> ○ More classes, education and training opportunities should be offered. ○ Should be options for University or DNR classes, or mentorship program to help younger generation learn. ○ Indigenous knowledge should inform class content; partner with local tribes ○ Offer training videos ○ Harvesting is best learned by structural education and field work
<i>Lake information—harvesting and timing</i>
<ul style="list-style-type: none"> ○ Information on harvesting and where rice is located is scarce ○ Good ricing lakes information is private and should not be on DNR website ○ Hard to find information on where and when to harvest wild rice ○ Lack of information from the DNR website ○ 1854 Treaty website has good information ○ Information changes quickly and is hard to keep up on
Harvesting Season and Hours
<i>Lake-specific openings</i>
<ul style="list-style-type: none"> ○ Open lakes at different times ○ Lake by lake, or region by region ○ Tribal and state season on same body of water should open at same time
<i>Non-continuous season</i>
<ul style="list-style-type: none"> ○ Not being open every day, instead having scheduled openings ○ Giving lakes time to “heal” ○ Not confident in DNR to gauge wild rice readiness
<i>State-wide harvesting start time</i>
<ul style="list-style-type: none"> ○ All lakes open at same time ○ Harvesting season is too early ○ Start time should be determined on a year-by-year basis
<i>Harvesting hours</i>
<ul style="list-style-type: none"> ○ Earlier start time ○ Later end time, expand hours ○ Extend hours into the late afternoon/evening to create greater access ○ Later start time ○ 9am too early, still dew and will damage bed (10am-4pm or later is better)
Harvesting Technique
<i>Green rice and ricing too early</i>
<ul style="list-style-type: none"> ○ Early harvest of green rice is a problem and happens too often—damages wild rice ○ Beaten/pounded – ruins rice for other harvesters ○ Not enough enforcement or education of DNR staff about wild rice
<i>Scouting</i>
<ul style="list-style-type: none"> ○ Extremely important to harvesters in order to assess where rice is/when it’s ready
Lake access
<ul style="list-style-type: none"> ○ Open more lakes to harvesting ○ Better canoe access ○ Don’t improve water access (work for it) ○ Keep open to everybody
Processing
<ul style="list-style-type: none"> ○ Small batch processors are hard to find

- More information on where a person can process wild rice is needed
- More information on how to self-process is needed

Source: 2018 Minnesota State Wild Rice Harvester Survey, Question 26

Table 26b. Respondents' additional comments (organized by theme)

MANAGEMENT AND REGULATION
Less, don't overregulate
○ Less regulation wanted, or don't add more
○ Let it be the natural way it is
○ DNR messes up regulation
○ Less politics involved
More, better enforcement and management
○ Would like to see better enforcement of regulations
○ A lot of ricers are going too early and hurting rice
○ More protections and better management of resource
Mention of DNR
<i>Positive comments</i>
○ Doing a good job
<i>Poor management or enforcement</i>
○ Staff did not have knowledge about wild rice
○ Need better training
○ Need more enforcement of wild rice
○ Management ruined wild rice lakes
More tribal involvement
○ Involve tribes in management and coordination of opening of lakes
○ Would like to see increased tribal involvement in DNR
License or permit
○ Too expensive
○ Change to multiple days
○ Nonresident only one day

Source: 2018 Minnesota State Wild Rice Harvester Survey, Question 26

Table 26c. Respondents' additional comments (organized by theme)

IMPORTANCE OF WILD RICE
Enjoyment of wild rice harvesting
Environmental
Family and food
Wild rice must be protected
Spiritual or cultural connection
Developed vs. native wild rice
○ Wanting wild rice to be kept "native"
○ Concerns over cultivated wild rice being near native stands
○ Need to understand the difference between them as impacts on ecosystem/environment differ
○ Overall against genetically modified/cultivated wild rice

Source: 2018 Minnesota State Wild Rice Harvester Survey, Question 26

Table 26d. Respondents' additional comments (organized by theme)

WILD RICE HEALTH AND THREATS
Factors impacting wild rice
<i>Animals, birds</i>
○ Beavers, muskrats, waterfowl (swans, geese)
<i>Ergot</i>
<i>Plants</i>
○ Lily pads, “invasives,” pickerel weed, reeds, and cattails
<i>Pollutants</i>
○ Herbicides
○ Sulfate/sulfide mining
○ Enforce sulfate standard
○ “Keep lakes clean”
<i>Recreation, development</i>
○ Motorized boats
○ Lakeshore development
○ Road building
<i>Rice worms</i>
<i>Water levels</i>
○ Too high
<i>Weather</i>
○ “Bad” weather
○ Storms destroyed crop—wind, heavy rainfall, hail
○ Cold, late spring affects germination
<i>Climate change</i>
○ Climate change is happening and affecting wild rice negatively
○ Wild rice is indicator of water quality/climate change
○ Concerns about climate change
○ Mid-to-late summer storms have destroyed crops
Observed decline of wild rice and harvesters
○ Decline of wild rice in lakes over the years
○ 2018 was a bad crop year
○ “Dying art or way of life”
○ A lot of work
○ A lot of older harvesters—very little recruitment of younger generation
○ Lack of public support
○ Fewer people out harvesting
Reference to mining or pipeline
<i>Is a threat</i>
○ No Line 3/Polymet/Tech/Twin Metals/copper and nickel mining/mines or pipelines
○ It is a threat to the future of wild rice
○ Will harm environment
○ Water quality standards must be enforced
○ Enbridge has spills/accidents frequently
○ Short-term economic gain for permanent pollution
○ Destroy tourist economy
<i>Is not a threat</i>
○ Have harvested by mining areas and seen no effects
○ Worked as a geologist and seen no ill effects

Source: 2018 Minnesota State Wild Rice Harvester Survey, Question 26

Table 27. Respondents' comments regarding "other problems" they experienced in their 2018 wild rice harvest (see Table 10, n=104)

Comments
Poor crop in most wild rice waters in 2018 [23 mentions]
Storm/wind damage to wild rice crop [22 mentions]
People harvesting too early [14 mentions]
Restricted harvesting hours; Time of day restrictions on the license. Had to take off work [6 mentions]
High water/flooding [3 mentions]
Poor quality rice/Empty husks [2 mentions]
Application of herbicides on rice! [2 mentions]
Lack of dense patches on many lakes likely due to precipitation pattern over the summer
Temperature and humidity
bad, contaminated water
Conditions
Climate Change, etc.
Fluctuating water levels
Need an actual opening date
DNR enforcement of when to harvest
License is for a specific day or therefore dependent on weather
Accessibility
Non-resident license fees
Cost of License
Home processing equipment/time
Other worms spiders or bugs
Docks and development. Shoreland owners damaging plants
Wild rice available to harvest on waters close to residence
I'm getting old (72 years) [age]
Made own sticks
Hard Labor! Great reward!

Source: 2018 Minnesota State Wild Rice Harvester Survey, Question 8

Table 28. Respondents' comments regarding "other" sources of information they use about wild rice and wild rice harvesting (see Tables 15 and 16)

Comments
Scouting [70 mentions]
Personal/local contacts [names omitted] [11 mentions]
Processors/buyers [7 mentions]
Personal knowledge/records/experience [6 mentions]
Internet, YouTube and websites [5 mentions]
Folk school [4 mentions]
Books [3 mentions]
Google Earth [3 mentions]
Forest service [2 mentions]
Sam Thayer's book Forager's Harvest and Wild Rice and Ojibwe People Book
Book – Wild rice and the Ojibway people by Vennum
Map of all lakes we can harvest
Live on Squaw lake
I am a duck hunter
W.R. game warden
White Earth rice camp
Tribal DNR
Weather for the year & conditions leading up to it

Source: 2018 Minnesota State Wild Rice Harvester Survey, Questions 12n and 12o

Table 29. Respondents’ comments regarding “others” who introduced them to wild rice harvesting (see Table 20)

Comments
Friend/family member/colleague [9 mentions]
Books, (e.g., authors Samuel Thayer, Brenda Child) [3 mentions]
Tribal Elder [3 mentions]
A member of the Leech Lake Nation [2 mentions]
Just started
Other harvesters through my research
Some help and tips from other ricers at accesses
Reading and practice
Life-long knowledge of the practice, friends that rice
I’m driven to learn and experience things that others have done to live and survive in the past to appreciate what we have today
Read about it in the “Volunteer” – (MN DNR Conservation Volunteer publication)
Watched a demonstration at McGregor Minnesota Wild Rice Days
Work in Cass Lake, live in Bemidji – all know basic rice facts
Indian Resource Center Cass Lake

Source: 2018 Minnesota State Wild Rice Harvester Survey, Question 16

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Appendices

Appendix A. Survey Cover Letter

LETTERHEAD

October 30, 2020

[First Name] [Last Name]

[Street Address]

[City] [State] [Zip code]

Minnesota State Wild Rice Harvester Survey

Dear [First Name] [Last Name],

I am writing to ask for your help in a research study about wild rice harvesting in Minnesota. The study is being led by Mae Davenport at the University of Minnesota – Twin Cities. The study is funded by the University of Minnesota and was designed by UMN Twin Cities researchers with input from several partner tribal organizations in Minnesota and Wisconsin.

I am contacting you because you are on a list of 2018 Minnesota State Wild Rice Harvesting Permit Holders. As a State permit holder, we believe you have an important perspective to share on wild rice harvesting and management, even if you did not make it out to harvest this past year. The purpose of this survey is to better understand harvesting practices over time. Additionally, this survey will provide valuable information to natural resource managers about the values of wild rice harvesting, concerns harvesters might have about wild rice and opinions on wild rice management.

We understand that this may be a busy time of the year for you, so we really appreciate you taking the time to help us with this study. **It should take you only about 20 minutes to complete the questionnaire.** This survey is voluntary and completely confidential. The risks of participating in this study are minimal. There are no direct benefits to you for participating in this study. You are free to withdraw at any time. Completion of this survey indicates your voluntary consent to participate. Your decision to participate will not affect your current or future relationship with the University of Minnesota. The ID # on the front page of your survey is used to help us track mailings, ensuring that your name is never affiliated with your responses. Please answer the questions as completely as possible. **Once you have completed the questionnaire, fold it in thirds and mail it back in the enclosed self-addressed, postage-paid envelope.**

We would be happy to answer any questions or listen to any comments you may have about this study. Please feel free to contact me by phone at 612-624-2721, or by email at mdaven@umn.edu. If you have any questions or concerns regarding the study and would like to talk to someone other than the researcher(s), you are encouraged to contact the Research Subjects' Advocate Line, D-528 Mayo, 420 Delaware Street S.E., Minneapolis, Minnesota, 55455; telephone 612-625-1650.

I hope you enjoy completing the questionnaire and I look forward to receiving your response.

Sincerely,



Mae Davenport

Director, Center for Changing Landscapes



Minnesota State Wild Rice Harvester Survey

University of Minnesota, Twin Cities

Thank you for your help with this important survey! After completing this questionnaire, please fold it in thirds and mail it back in the enclosed self-addressed stamped envelope.

This survey questionnaire or any data analyzed or reported as part of the survey project do not constitute a claim concerning the location, boundaries, scope or use of wild rice waters as either designated or existing uses. The wild rice waters identified in this survey effort do not constitute a wild rice waters determination list and shall not be used as such in any Tribal, State or Federal legal proceedings.

Wild Rice Harvesting Experience


1. Did you harvest wild rice outside of Minnesota in 2018?

No Yes

1a. If yes, where else did you harvest wild rice? (Check all that apply)

- | | |
|---------------------------------------|--|
| <input type="checkbox"/> Wisconsin | <input type="checkbox"/> Ontario, Canada |
| <input type="checkbox"/> Michigan | <input type="checkbox"/> Manitoba, Canada |
| <input type="checkbox"/> North Dakota | <input type="checkbox"/> Other (please specify): _____ |
| <input type="checkbox"/> South Dakota | |

2. Did you harvest wild rice in Minnesota in 2018?

No (If no, please skip ahead to [Question 9](#))  Yes

3. Approximately how many pounds of wild rice did you harvest in 2018 in Minnesota?

_____ lbs. *DO NOT include your partner's share, if applicable.*

4. Have you sold any unprocessed wild rice that was harvested in 2018 in Minnesota?

No Yes

4a. If yes, about how many pounds of unprocessed wild rice have you sold? _____ lbs.

5. Approximately how many pounds of 2018 wild rice have you processed or had processed?

_____ lbs.

5a. Of the processed wild rice from 2018, about how many pounds did you or do you intend to...

- | | |
|------------------------------------|------------|
| 1. keep for personal use? | _____ lbs. |
| 2. give away or share with others? | _____ lbs. |
| 3. sell? | _____ lbs. |

6. Who processed your 2018 wild rice? (Check all that apply)

- | | |
|---|---|
| <input type="checkbox"/> I processed the wild rice myself | <input type="checkbox"/> A commercial processor (please specify): _____ |
| <input type="checkbox"/> A community facility | <input type="checkbox"/> Other (please specify): _____ |
| <input type="checkbox"/> A family member or friend | |

7. Where did you harvest wild rice in Minnesota in 2018? Please indicate the waters you harvested on, nearby town, counties, number of trips per lake/stream and estimated amount harvested in total lbs.

	Ricing Water Body	Town and/or County (please also list the nearest town and/or county)	Number of trips	Estimated amount harvested from this location (in total lbs.)
1				
2				
3				
4				
5				
6				

8. How much of a problem were the following issues for you in your 2018 wild rice harvest?

(Please check one box in each row)

	Not a problem	Slight problem	Moderate problem	Severe problem
a. Having the time to go	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Finding a partner	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Having the proper equipment to harvest	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Having transportation to wild rice waters	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Knowing <u>where</u> to harvest	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	Not a problem	Slight problem	Moderate problem	Severe problem
f. Knowing <u>when</u> to harvest	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g. Knowing <u>how</u> to harvest	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h. The financial costs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i. The physical challenge of harvesting	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
j. Weather conditions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
k. Water levels were too high	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
l. Water levels were too low	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
m. Rice worms	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
n. Fungal brown spot disease	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
o. Wild rice plants were eaten by other animals or waterfowl	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
p. Other vegetation crowding out wild rice	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
q. Other harvesters damaging plants	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
r. Non-harvesters damaging plants (e.g., boaters, shoreland owners)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
s. Too much harvester pressure – over harvesting	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
t. Too little harvesting pressure – under harvesting	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
u. Seeing too many other harvesters on the water	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
v. Seeing other harvesters using improper techniques	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
w. Finding a wild rice buyer	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
x. Finding a wild rice processor	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
y. Other (please specify): _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

9. In your opinion, how would you rate the amount of the wild rice “crop” and its quality of over the last three years? *(Please check one box in each row)*

		Very poor	Poor	Fair	Good	Very good	Don't know
2018	Amount	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Quality	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2017	Amount	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Quality	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2016	Amount	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Quality	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

10. Approximately how many years have you gone ricing including 2018? *(Estimate if unsure)*

_____ years

11. How knowledgeable would you say you are about harvesting wild rice sustainably?

Not at all Slightly knowledgeable Moderately knowledgeable Very knowledgeable

12. What sources of information do you use about wild rice and wild rice harvesting? *(Please check all that apply)*

- | | |
|--|--|
| <input type="checkbox"/> a. Signage posted at lake access points | <input type="checkbox"/> g. Local MN DNR staff |
| <input type="checkbox"/> b. Great Lakes Indian Fish & Wildlife Commission website (GLIFWC) | <input type="checkbox"/> h. Local media (e.g., radio, newspaper) |
| <input type="checkbox"/> c. 1854 Treaty Authority website | <input type="checkbox"/> i. Training or classes |
| <input type="checkbox"/> d. Tribal website | <input type="checkbox"/> j. Family or friends |
| <input type="checkbox"/> e. MN DNR Hunting and Trapping Regs Handbook | <input type="checkbox"/> k. Social media sites |
| <input type="checkbox"/> f. MN DNR website | <input type="checkbox"/> l. Rice chiefs or other tribal officials |
| | <input type="checkbox"/> m. Word of mouth from other rice harvesters |
| | <input type="checkbox"/> n. Other (please specify): _____ |

12o. From the previous list (Question 12, a-n), which three information sources would be the best to provide you with information about wild rice in the future? *(Please list in order of best, second-best, and third-best information source)*

1. _____ 2. _____ 3. _____

13. Please indicate your level of agreement or disagreement with each of the statements below. (Please check one box in each row)

	Strongly disagree	Somewhat disagree	Neither disagree nor agree	Somewhat agree	Strongly agree
a. Wild rice is central to my own identity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Wild rice is central to the preservation of my culture	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Harvesting wild rice brings my family closer together	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Harvesting wild rice brings my community closer together	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Wild rice is a healthful food source	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. Wild rice tastes good	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g. Wild rice is important to a healthy natural ecosystem	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h. Wild rice is an important source of food for me	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i. Many important family memories or traditions are tied to wild rice	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
j. Harvesting wild rice is an important way for me to express my rights and responsibilities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
k. Wild rice is important to my community's economy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
l. Wild rice is important to the region's economy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
m. Being able to harvest wild rice means a lot to me	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
n. I enjoy harvesting wild rice	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
o. I enjoy processing wild rice	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
p. Harvesting wild rice strengthens my connection with nature	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
q. Eating natural wild rice harvested by hand is special to me	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
r. I feel a sense of pride in my heritage when I am harvesting wild rice	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
s. Harvesting wild rice is a way for me to take care of the natural world	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
t. I feel that wild rice is a part of me	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
u. Wild rice and wild rice waters need better protection	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Wild Rice Management

14. To what extent do you support or oppose the following actions to protect and restore wild rice? (Please check one box in each row)

	Strongly oppose	Somewhat oppose	Neither oppose nor support	Somewhat support	Strongly support
a. Determining harvest dates for specific waters based on wild rice readiness, rather than a set annual date (e.g., Aug. 15) for all waters	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Requiring harvesters to watch a short video on sustainable harvesting practices before receiving a State permit	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Enforcing existing water quality regulations to protect wild rice	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Increasing monitoring of wild rice plants and waters	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Expanding wild rice restoration programs (e.g., reseeded, managing water levels)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. Improving water access points for harvesters	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g. Coordinating wild rice habitat conservation efforts between tribal, state, and local entities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h. Conducting more research on wild rice	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i. Controlling water levels to sustain wild rice habitats	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
j. Expanding public and private partnerships to protect wild rice	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
k. Increasing water quality regulations to protect wild rice	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
l. Expanding education and outreach programs to raise awareness about the ecological, nutritional and cultural values of wild rice	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
m. Using Minnesota State Harvesting Permit fees for wild rice stewardship activities <u>only</u>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Information About You

15. At what age did you begin harvesting wild rice? _____

16. Who introduced you to wild rice harvesting? (Please check all that apply)

- | | |
|---|--|
| <input type="checkbox"/> Parent | <input type="checkbox"/> Organized class or group |
| <input type="checkbox"/> Other family member (not a parent) | <input type="checkbox"/> Co-workers |
| <input type="checkbox"/> Spouse | <input type="checkbox"/> Other community member |
| <input type="checkbox"/> Friend | <input type="checkbox"/> Other (please specify): _____ |
| <input type="checkbox"/> I learned on my own | |

17. Have you introduced others to wild rice harvesting?

Yes No

17a. If yes, about how many other people have you introduced to wild rice harvesting?

_____ (Estimate if unsure)

18. About how many times did you eat Minnesota natural wild rice in the past 12 months?

(Please check one)

- I did not eat Minnesota natural wild rice in the past 12 months
- 1-5 times
- 6-11 times
- 1-3 times a month
- 1-3 times a week
- 4 or more times a week

19. What license(s) have you harvested wild rice under? (Please check all that apply)

- State license Tribal membership card/permit Non-resident Off-reservation permit
- On-reservation, non-Indian permit

20. Are you a Minnesota resident?

Yes No

21. Which of the following best describes your total household income from all sources in 2017 before taxes? (Please check one box)

- | | | |
|--|--|--|
| <input type="checkbox"/> Under \$20,000 | <input type="checkbox"/> \$75,000 - \$99,999 | <input type="checkbox"/> \$200,000 - \$249,999 |
| <input type="checkbox"/> \$20,000 - \$49,999 | <input type="checkbox"/> \$100,000 - \$149,999 | <input type="checkbox"/> \$250,000 - \$299,999 |
| <input type="checkbox"/> \$50,000 - \$74,999 | <input type="checkbox"/> \$150,000 - \$199,999 | <input type="checkbox"/> \$300,000 or more |
| | | <input type="checkbox"/> Prefer not to respond |

22. What is the highest level of formal education you have completed? (Please check one box)

- | | |
|--|--|
| <input type="checkbox"/> Did not finish high school | <input type="checkbox"/> College bachelor's degree |
| <input type="checkbox"/> Completed high school | <input type="checkbox"/> Some college graduate work |
| <input type="checkbox"/> Some college but no degree | <input type="checkbox"/> Completed graduate degree (Master's or PhD) |
| <input type="checkbox"/> Associate degree or vocational degree | <input type="checkbox"/> Prefer not to respond |

23. In what year were you born? _____

24. How do you describe yourself? (Please check all that apply)

- Female Male Transgender Non-binary/gender non-conforming
- Other (please specify): _____ Prefer not to respond

25. What category or categories best describe you? *(Please check all that apply)*

- | | |
|--|---|
| <p><input type="checkbox"/> White
For example, German, Irish, English, Italian, Polish, French, Swedish, Norwegian, etc.</p> <p><input type="checkbox"/> Hispanic, Latino, or Spanish heritage
For example, Mexican or Mexican American, Puerto Rican, Cuban, Salvadoran, Dominican, Colombian, etc.</p> <p><input type="checkbox"/> Black or African American
For example, African American, Jamaican, Haitian, Nigerian, Ethiopian, Somalian, etc.</p> <p><input type="checkbox"/> Asian
For example, Chinese, Filipino, Asian Indian, Vietnamese, Hmong, Korean, Japanese, etc.</p> | <p><input type="checkbox"/> American Indian or Alaska Native
For example, Minnesota Chippewa Tribe, Shakopee Mdewakanton Sioux, Navajo Nation, Mayan, Aztec, Nome Eskimo Community, etc. (Please specify tribal affiliation): _____</p> <p><input type="checkbox"/> Middle Eastern or North African
For example, Lebanese, Iranian, Egyptian, Syrian, Moroccan, Algerian etc.</p> <p><input type="checkbox"/> Native Hawaiian or other Pacific Islander
For example, Native Hawaiian, Samoan, Chamorro, Tongan, Fijian, Marshallese, etc.</p> <p><input type="checkbox"/> Some other race, ethnicity or heritage (Please specify): _____</p> <p><input type="checkbox"/> Prefer not to respond</p> |
|--|---|

26. Do you have any comments about wild rice harvesting or management? We welcome your insights!

Thank you for your help!

If you have questions about the survey or project, please contact Dr. Mae Davenport, Department of Forest Resources, 115 Green Hall, 1530 Cleveland Avenue N., St. Paul, MN 55108. Phone: (612) 624-2721.



Protecting the Harvest

A study of present-day Minnesota state-permitted wild rice harvesters

Manoomin (Ojibwe) or Psig (Dakota) (wild rice, *Zizania palustris*) holds great cultural, ecological, and economic importance. It is Minnesota's state grain and to the Ojibwe Tribes across the Great Lakes it is a sacred food, medicine, and gift from the Creator. Despite its importance, the species' range has declined dramatically because of climate change, competing vegetation, changes in land use, water levels, and water quality. Indigenous people have been harvesting Manoomin in this area for millennia. Hand-harvesting natural wild rice has also become an important tradition to non-tribal members in the state, who are required to purchase a state permit. However, state-permitted harvesting by non-tribal members has declined dramatically since the 1960s. In 2018, the University of Minnesota partnered with several tribes across present-day Minnesota, Wisconsin, and Michigan to design a survey* of Minnesota state-permitted harvesters in order to better understand their values, beliefs, and behaviors associated with wild rice harvesting, processing, and protection. Surveys were mailed to 1,339 state permit holders; 672 people responded for a 53% response rate. Insights gained will inform future Manoomin stewardship.

2020

Profile of survey respondents

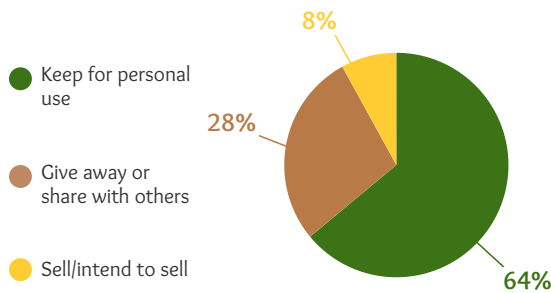


- 76% male
- 23% female
- 1% other/prefer not to respond

- The average 2018 harvester was 55 years old, had riced for 14 years, and harvested 139 lbs (unprocessed) in 2018. A majority (93%) of respondents identified as White.
- In total, respondents harvested more than 83,000 lbs of wild rice (unprocessed) in 2018. They rated the 2018 "crop" as *poor to fair* in amount and *fair* in quality.



What do state-permitted harvesters do with their wild rice?



"Minnesota wild rice, harvested and processed right, is the best tasting form of rice in the world. It must be protected!"

—survey respondent

What do harvesters value and believe about wild rice?

98% agree** it is a *healthful food source*


99% agree it *tastes good*

94% agree that *eating wild rice that they have harvested* is special to them

97% enjoy *harvesting wild rice*

94% agree it is important to a *healthy ecosystem*

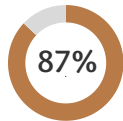
89% agree that *being able to harvest wild rice* means a lot to them



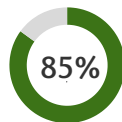
80% agree that *wild rice and wild rice waters need better protection*

**percentage of respondents who somewhat to strongly agreed

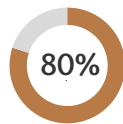
Which management strategies do state-permitted harvesters support?



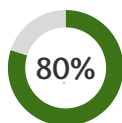
support enforcing water quality regulations to protect wild rice



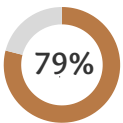
support expanding wild rice restoration programs (e.g., reseed, managing water levels)



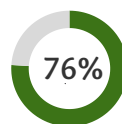
support using Minnesota state harvesting permit fees for wild rice stewardship activities only



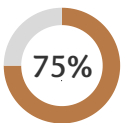
support increasing monitoring of wild rice plants and waters



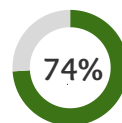
support increasing water quality regulations to protect wild rice



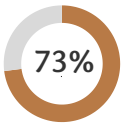
support expanding education and outreach programs to raise awareness about the ecological, nutritional, and cultural values of wild rice



support coordinating wild rice habitat conservation efforts between tribal, state, and local entities



support expanding public and private partnerships to protect wild rice



support conducting more research on wild rice



"Wild rice, because of its nutritional value and important

component of the natural order of things, is probably one of the most important plants to all Minnesotans. From human consumption to the waterfowl and shorebirds that eat the kernels to the variety of insects, which feed red-winged blackbirds and others, it needs all the protection and research that we can afford, because once it's gone, it's hard to replace."

--survey respondent

This study was conducted as part of the Kawe Gidaa-Naanaagadawendaamin Manoomin (First We Must Consider Manoomin/Psih) project. The partnerships created through this project are among its most important outcomes. We would like to acknowledge our project collaborators and partners: Mark Bellcourt (White Earth Nation), retired UMN; Jeremy Bloomquist, St. Croix Chippewa Indians of Wisconsin Environmental Services; Perry Bunting, Mille Lacs Band of Ojibwe DNR; Trinty Caldwell (Menominee), UW-Oshkosh student; Eric Chapman (Lac du Flambeau Ojibwe Nation); LeAnn Charwood (Leech Lake Band of Ojibwe), Leech Lake Tribal College student; Jamie Colvin (Seminole Nation of Oklahoma), Haskell Indian Nations University student; Diana Dalbotten, UMN; Mae Davenport, UMN; Peter David, Great Lakes Indian Fish & Wildlife Commission; Karen Diver (Fond du Lac), University of Arizona; Mike Dochry (Citizen Potawatomi Nation), UMN; Bree Duever, UMN; McKaylee Duquain (Menominee), UMN student; Joe Graven (Lac du Flambeau Band of Lake Superior Chippewa Indians), WI, Lac du Flambeau wildrice cultural enhancement program; Emily Green, UMN; Katherine Hagsten (Leech Lake Band of Ojibwe); Kari Hedin, Fond du Lac Resource Management Division; Susannah Howard (Citizen Potawatomi Nation), Smith College student; Riley Howes (Fond du Lac), Brown University student; Tom Howes (Fond du Lac Band of Lake Superior Chippewa); John D. Johnson Sr. (Lac du Flambeau); Anna Kadrie, UMN student; Shannon Kesner (Fond du Lac); Hannah Jo King, UMN student; Erik Kojola, UMN; Roger LaBine (Lac Vieux Desert Band of Lake Superior Chippewa); Dan Larkin, UMN; Laura Matson, UMN; Gabby Menomin (Forest County Potawatomi), UMN student; Melonee Montano (Red Cliff Band), Great Lakes Indian Fish and Wildlife Commission; Seth Moore, Grand Portage Band of Lake Superior Chippewa; Brenna Mullen (Fond du Lac), Bemidji State University student; Amy Myrbo, St. Croix Watershed Research Station, Science Museum of MN; Gene-Hua Crystal Ng, UMN; Michael Northbird (Minnesota Chippewa Tribe); Maddy Nyblade, UMN student; Patrick O'Hara, UMN student; Jaren Peplinski, UMN student; Meghan Porter, Great Lakes Inter-Tribal Council, Inc.; Richard Robinson (Leech Lake Band of Ojibwe); Cara Santelli, UMN; Riley Schmitter (Chickasaw Nation), UMN student; Nancy Schuldt, Fond du Lac Resource Management Division; Robert Shimek (White Earth Nation); Allison Smart (Sault Ste Marie Tribe of Chippewa Indians), Little River Band of Ottawa Indians; Wally Storbakken (Leech Lake Band of Ojibwe), Leech Lake Band of Ojibwe; Donovan Strong (Bois Forte); Ed Swain, retired Minnesota Pollution Control Agency; Josh Torgeson, UMN student; Darren Vogt, 1854 Treaty Authority; Alex Waheed, UMN student; Ulah White (Mille Lacs), UMN student. Funding: University of Minnesota Grand Challenges Research Program

*This survey questionnaire or any data analyzed or reported as part of the survey project do not constitute a claim concerning the location, boundaries, scope or use of wild rice waters as either designated or existing uses. The wild rice waters identified in this survey effort do not constitute a wild rice waters determination list and shall not be used as such in any Tribal, State or Federal legal proceedings.