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## Summary of results

### Participation and harvest

We asked respondents to report if they participated in harvesting wild rice during the 2022 season, how much rice they harvested, if they sold any rice they harvested, and how many days they spent harvesting wild rice during the season.

- Nearly all respondents (91%) indicated that they participated in wild rice harvesting in Minnesota during the 2022 season (Table 3).
- Of those that went ricing, the average reported harvest was 128 pounds per person (Table 4). We estimated a statewide harvest of 178,432 pounds of unprocessed wild rice.
- We estimated that 14% of wild rice harvesters sold rice that they harvested in 2022 (Table 5).
- On average, wild rice harvesters spent 2.8 days harvesting wild rice during the 2022 season. We estimated a total of 3,092 person days were spent harvesting wild rice in Minnesota in 2022 (Table 6).

### Harvest location

We asked respondents to report their top 5 locations of harvest by waterbody, county, and nearest town, and the number of days they spent harvesting wild rice at that location. Figure 1 contains a depiction of the reported days spent harvesting wild rice in counties in Minnesota. These data are not an estimate of the population, but the raw number of days reported by survey respondents.

- Wild rice harvest effort was concentrated in the Northern half of the state (Figure 1).
- More than half (52%) of the days Minnesotans spent harvesting wild rice, as reported by survey respondents, occurred in Itasca, Cass, St. Louis, and Aitkin counties combined (Table 7).

### Time and date of harvest

We asked respondents to report what days during the season they were active harvesting wild rice, and the time of day that they harvested wild rice during a “typical day” during the 2022 season.

- Harvesting effort peaked during the period September 3<sup>rd</sup> to September 7<sup>th</sup>, where greater than 50% of license holders reported going ricing (Figure 2). Very few license holders reported harvesting during the first and last days of the wild rice harvest season.
- More than 50% of wild rice harvesters reported that they were active harvesting wild rice during the entirety of the legal harvest day on a typical days, (Figure 3), and more than 80% reported harvesting between the hours of 10am and 12pm.

## Experience and perceived conflict with waterfowl hunters

We asked wild rice license holders about their interactions with waterfowl hunters, whether or not those interactions negatively impacted their wild rice harvesting experience, perception of safety when encountering waterfowl hunters, and how they responded to encountering waterfowl hunters. Figure 4 contains a summary of estimates of the number of wild rice license holders that participated in the season, encountered waterfowl hunters, and perceived conflict from the encounter.

- Very few (5%) wild rice license holders reported that they avoided going ricing during the experimental early teal season in order to avoid waterfowl hunters (Table 10).
- Around a quarter (28%) of wild rice license holders reported that they encountered waterfowl hunters while they were harvesting wild rice in Minnesota in 2022 (Table 11). We estimated that 390 wild rice license holders encountered waterfowl hunters.
- Of the 28% of wild rice license holders that encountered waterfowl hunters while harvesting wild rice, 26% reported that encountering waterfowl hunters negatively impacted their experience (Table 12). We estimated that 101 wild rice harvesters encountering waterfowl hunters while ricing in 2022 perceived that the encounter negatively impacted their experience.
- Table 13 contains a summary of wild rice harvesters' responses to encountering waterfowl hunters. The majority of wild rice harvesters reported that they continued ricing as usual when they encountered waterfowl hunters. Some wild rice harvesters reported moving to another location in the waterbody. Very few rice harvesters quit ricing, moved to another waterbody, or decided that ricing was not important to them.
- Harvesters reported their agreement with the statement "I felt unsafe when encountering waterfowl hunters while harvesting wild rice in Minnesota in 2022." The majority of respondents that encountered waterfowl hunters (57%) either strongly, moderately, or slightly disagreed with the statement, while slightly more than a third (34%) agreed (Figure 5 and Table 14).

## Satisfaction and crowding

We asked wild rice license holders about their overall satisfaction with ricing in Minnesota in 2022, and about their satisfaction with elements of the wild rice harvesting experience.

- Overall satisfaction with wild rice harvesting in Minnesota was very high. Three-quarters of respondents reported feeling either slightly, moderately, or very satisfied (Figure 6 and Table 15).
- Nearly 60% of wild rice harvesters reported satisfaction with elements of the wild rice harvest experience presented to them (Table 16).

## Motivations

We asked respondents their agreement or disagreement with statements about why they go wild rice harvesting, including: to be outdoors; to gather food; to harvest rice to sell; to spend time with friends or family;























**Table 4. Mean, 95% confidence interval, median, minimum and maximum pounds of wild rice harvested during the 2022 wild rice harvest season**

	Mean	Median	Min	Max	Estimated total harvest of green unprocessed rice in 2022
Harvest	128 [112, 144]	60	0	4000	178,432

- $n = 750$
- Estimated total harvest from: 1,394 (rice harvesters) x 128 (mean pounds harvested)
- [95% Confidence interval]





**Table 7. Days spent harvesting wild rice by county of waterbody, and percent of total days reported**

	County 1	County 2	County 3	County 4	County 5	Days	Percent of Days
Itasca	229	49	12	2	0	292	16
Cass	164	44	25	7	1	241	13
St. Louis	183	38	12	4	1	238	13
Aitkin	131	36	16	6	3	192	10
Crow Wing	119	20	5	1	2	147	8
Pine	66	9	9	7	4	95	5
Otter Tail	68	12	4	9	0	93	5
Clearwater	52	30	3	1	0	86	5
Hubbard	51	20	13	0	0	84	4
Beltrami	47	13	1	0	0	61	3
Anoka	38	11	2	1	0	52	3
Lake	39	9	1	0	0	49	3
Becker	41	4	3	0	0	48	3
Carlton	36	3	4	0	0	43	2
Wadena	28	13	1	0	0	42	2
Cook	25	7	1	0	0	33	2
Kanabec	19	1	0	0	0	20	1
Mille Lacs	19	0	0	0	0	19	1
Stearns	12	2	0	0	0	14	1
Morrison	4	1	0	0	0	5	<1
Pope	2	2	0	0	0	4	<1
Winona	3	0	0	0	0	3	<1
Chisago	2	0	0	0	0	2	<1
Hennepin	1	1	0	0	0	2	<1
Kandyohi	1	1	0	0	0	2	<1
Manhomen	2	0	0	0	0	2	<1
Wabasha	2	0	0	0	0	2	<1
Todd	1	0	0	0	0	1	<1
Wright	1	0	0	0	0	1	<1
<b>Total</b>	<b>1386</b>	<b>326</b>	<b>112</b>	<b>38</b>	<b>11</b>	<b>1873</b>	<b>100</b>

Respondents reported places of harvest for up to 5 locations. Counties 1-5 refer to those locations reported by respondents.











**Table 12. Proportion of wild rice harvesters that reported that encountering waterfowl hunters while harvesting wild rice in Minnesota in 2022 negatively impacted their experience**

	Proportion that were negatively impacted	Estimated total number of wild rice harvesters that encountered waterfowl hunters and it negatively affected experience
Did encountering waterfowl hunters negatively affect your rice harvesting experience?	.26 [.20, .32]	101

- $n = 212$
- Estimated wild rice harvesters that encountered waterfowl hunters: 390 (estimated harvesters that encountered waterfowl hunters) x .26 (proportion encountering hunters impacted experience)
- [95% Confidence interval]

**Table 13. Percentage of wild rice harvesters' responses to encountering waterfowl hunters.**

	<b>Does not describe at all</b>				<b>Describes very well</b>
Continued ricing as usual	8	6	8	12	66
Moved to another waterbody to rice	84	5	2	3	6
Moved to another area of the same waterbody to rice	44	8	6	17	25
Quit ricing for the day	87	5	2	3	3
Decided ricing wasn't that important to me	95	1	1	1	2

- $n = 200; 195; 198; 191; 193; 199$  (in order top to bottom)
- Responses from wild rice harvest season participants only
- Responses from wild rice harvesters that encountered waterfowl hunters only

**Table 14. Percentage of wild rice harvesters' who encountered waterfowl hunters while harvesting wild rice in 2022 agreement or disagreement with the statement: I felt unsafe encountering waterfowl hunters while harvesting wild rice in Minnesota in 2022.**

Strongly disagree	Moderately disagree	Slightly disagree	Neither	Slightly agree	Moderately agree	Strongly agree
38	16	4	8	13	11	10

- $n = 211$
- Responses from wild rice harvesters that encountered waterfowl hunters only

**Table 15. Percentage of wild rice harvesters' overall satisfaction or dissatisfaction with their wild rice harvest experience in Minnesota in 2022**

Very dissatisfied	Moderately dissatisfied	Slightly dissatisfied	Neither	Slightly satisfied	Moderately satisfied	Very satisfied
5	5	9	5	11	35	29

- $n = 737$
- Question wording: *Overall, how satisfied were you with wild rice harvesting in Minnesota in 2022?*
- Responses from wild rice harvest season participants only



**Table 16. Percentage of wild rice harvesters' satisfaction or dissatisfaction with elements of the 2022 wild rice harvest season in Minnesota**

	Very dissatisfied	Moderately dissatisfied	Slightly dissatisfied	Neither	Slightly satisfied	Moderately satisfied	Very satisfied
Pounds of rice harvested	6	11	11	7	16	31	18
Quality of rice beds	7	11	13	8	17	26	18
Number of other rice harvesters encountered	2	3	8	26	11	17	32
Rice harvest regulations	4	6	8	24	8	24	26
Access to places to rice	2	4	7	18	12	28	29
Number of non-ricers encountered (e.g., kayakers, anglers)	3	2	2	37	5	16	37

- $n = 747; 744; 742; 738; 741; 735$  (in order top to bottom)
- Responses from wild rice harvest season participants only

**Table 17. Percentage of wild rice harvesters' perception of crowding during the wild rice harvest season in Minnesota in 2022**

Not at all crowded		Slightly crowded			Moderately crowded		Extremely crowded	
1	2	3	4	5	6	7	8	9
45	18	15	3	6	8	3	2	0

- $n = 737$
- Question wording: *Thinking about your MN rice season as a whole, how crowded did you feel while harvesting wild rice?*
- Responses from wild rice harvest season participants only

**Table 18. Percentage of wild rice harvesters' satisfaction or dissatisfaction with elements of the 2022 wild rice harvest season in Minnesota**

<b>I harvest wild rice...</b>	<b>Strongly disagree</b>	<b>Moderately disagree</b>	<b>Slightly disagree</b>	<b>Neither</b>	<b>Slightly agree</b>	<b>Moderately agree</b>	<b>Strongly agree</b>
To be outdoors	1	0	0	4	11	20	64
To gather food	1	0	1	3	10	18	67
To harvest rice to sell	61	7	2	13	7	4	6
To spend time with friends or family	2	1	1	6	13	22	54
For relaxation	8	7	5	18	18	15	28
For challenge	3	4	2	17	17	26	31
To maintain the ricing tradition	5	2	1	17	12	20	42

- $n = 826; 831; 811; 822; 817; 815; 824$  (in order top to bottom)
- Responses from wild rice harvest season participants only

**Table 19. Percentage of wild rice harvesters' satisfaction or dissatisfaction with elements of the 2022 wild rice harvest season in Minnesota**

	Not at all limiting						Very limiting
	1	2	3	4	5	6	7
Finding a rice processor	36	9	7	11	15	11	11
Finding a buyer	80	6	3	8	1	1	1
Knowing when to harvest	32	14	10	18	15	8	3
Financial expense	50	17	10	12	6	3	2
Knowing where to harvest	31	12	10	16	16	10	5
Having proper equipment	55	13	8	10	7	5	2
Physical challenge	36	19	13	14	11	5	2
Finding a partner	45	14	9	13	10	6	3
Timing of the rice crop	21	11	11	16	19	13	8

- $n = 826; 831; 811; 822; 817; 815; 824$  (in order top to bottom)
- Responses from wild rice harvest season participants only

## Appendix A. Survey questionnaire

### THE 2022 WILD RICE SEASON IN MINNESOTA

A study of wild rice harvesters' opinions and activities



Photo: Greg Hoch

**Your help on this study is greatly appreciated!**

**PLEASE COMPLETE EVEN IF YOU DID NOT HARVEST RICE**

*Please return your completed questionnaire in the enclosed envelope. The envelope is self-addressed and no postage is required. Thanks!*

**mn** DEPARTMENT OF  
NATURAL RESOURCES

{PIN}

Minnesota Department of Natural Resources  
Fish and Wildlife Division  
500 Lafayette Rd.  
St. Paul, Minnesota 55155  
WildRiceSurvey.DNR@state.mn.us

**Part I. Participation in the 2022 Wild Rice Harvest Season**

Q1. Did you harvest wild rice in Minnesota in 2022? *(Please choose one.)*

Yes     No    → (If "No," please *Skip to Part V.*)

**Part II. Wild Rice Harvest in 2022**

Q2. Approximately how many pounds of wild rice did you personally harvest in 2022 in Minnesota? Please report the rice weight *BEFORE* processing.

\_\_\_\_\_ lbs. *Do not include your partners' share, if applicable.*

Q3. Did you sell any of the rice that you harvested in 2022?

Yes     No

Q4. How many days did you spend harvesting wild rice in Minnesota in 2022? \_\_\_\_\_ days.

Q5. On which 5 waterbodies did you spend the *MOST* time harvesting wild rice during the 2022 season?

Name of waterbody	MN County where waterbody located	Nearest town	# Days harvesting this waterbody
1.			
2.			
3.			
4.			
5.			

Q6. Please think about a *typical day* you spent harvesting wild rice during the 2022 season in Minnesota. For this day, please check the hours below that you were on the water actively harvesting wild rice. *(Please choose all that apply.)*

9am to 10am     10am to 11am     11am to 12pm  
 12pm to 1pm     1pm to 2pm     2pm to 3pm

Q7. During which of the following periods did you actively harvest wild rice in Minnesota during the 2022 season? *(Please choose all that apply.)*

Aug. 15 to Aug. 19     Aug. 20 to Aug. 24     Aug. 25 to Aug. 29     Aug. 30 to Sep. 2  
 Sep. 3 to Sep. 7     Sep. 8 to Sep. 12     Sep. 13 to Sep. 17     Sep. 18 to Sep. 22  
 Sep. 23 to Sep. 27     Sep. 28 to Sep. 30

**Part III. Experiences with Waterfowl Hunters**

Q8. The experimental early teal waterfowl hunting season occurred September 3-7, 2022 in Minnesota. Did you intentionally abstain from harvesting wild rice on any day during the experimental early teal waterfowl hunting season to avoid encountering waterfowl hunters? *(Please choose one.)*

Yes     No

Q9. The early teal season, youth waterfowl season, and early goose seasons coincide with wild rice harvest season in Minnesota. Did you encounter anyone hunting waterfowl while you were harvesting rice during the 2022 season in Minnesota? (Please choose one.)

\_\_\_ Yes      \_\_\_ No -> (If "No," please *Skip to Part IV.*)

Q10. Did encountering waterfowl hunters negatively affect your rice harvesting experience? (Please choose one.)

\_\_\_ Yes      \_\_\_ No

Q11. The following are some responses you may have had when encountering waterfowl hunters while harvesting rice. Choose the option that best describes how you reacted. (Please circle one for each.)

	Does not describe at all			Describes very well		
Continued ricing as usual.	1	2	3	4	5	
Moved to another waterbody to rice.	1	2	3	4	5	
Moved to another area of the same waterbody to rice.	1	2	3	4	5	
Quit ricing for the day.	1	2	3	4	5	
Decided ricing wasn't that important to me.	1	2	3	4	5	

Q12. How much do you agree or disagree with the following statement: *I felt unsafe encountering waterfowl hunters while harvesting wild rice in Minnesota during the 2022 season.* (Please circle one.)

Strongly disagree	Moderately disagree	Slightly disagree	Neither	Slightly agree	Moderately agree	Strongly agree
1	2	3	4	5	6	7

**Part IV. Satisfaction with Wild Rice Harvesting**

Q13. Overall, how satisfied were you with wild rice harvesting in Minnesota in 2022? (Please circle one.)

Very dissatisfied	Moderately dissatisfied	Slightly dissatisfied	Neither	Slightly satisfied	Moderately satisfied	Very satisfied
1	2	3	4	5	6	7

Q14. How satisfied or dissatisfied were you with the following elements of the wild rice harvest season in Minnesota in 2022? (Please circle one for each).

	Very dissatisfied	Moderately dissatisfied	Slightly dissatisfied	Neither	Slightly satisfied	Moderately satisfied	Very satisfied
Pounds of rice harvested.	1	2	3	4	5	6	7
Quality of wild rice beds.	1	2	3	4	5	6	7
Number of other rice harvesters encountered.	1	2	3	4	5	6	7
Rice harvest regulations.	1	2	3	4	5	6	7
Access to places to harvest rice.	1	2	3	4	5	6	7
Number of non-ricers encountered (e.g., kayakers, anglers).	1	2	3	4	5	6	7

Q15. Crowding is the negative feeling you may experience while encountering other people, including other ricers, while ricing. Thinking about your MN ricing season as a whole, how crowded did you feel while harvesting wild rice? (Please circle one response that best matches how you felt).

Not at all crowded		Slightly crowded		Moderately crowded		Extremely crowded		
1	2	3	4	5	6	7	8	9

**Part V. Motives for Harvesting Wild Rice**

Q16. How much do you agree or disagree with the following statements as reasons why you harvest wild rice? (Please circle one for each.)

I harvest wild rice...	Strongly disagree	Moderately disagree	Slightly disagree	Neither	Slightly agree	Moderately agree	Strongly agree
To be outdoors.	1	2	3	4	5	6	7
To gather food.	1	2	3	4	5	6	7
To harvest rice to sell.	1	2	3	4	5	6	7
To spend time with friends or family.	1	2	3	4	5	6	7
For relaxation.	1	2	3	4	5	6	7
For challenge.	1	2	3	4	5	6	7
To maintain the ricing tradition.	1	2	3	4	5	6	7

**Part VI. Factors Limiting Wild Rice Harvesting**

Q17. Many factors limit peoples' ability to continue harvesting wild rice. How limiting are each of the following factors to your ability to go ricing? (Please circle one for each.)

	Not at all limiting	1	2	3	4	5	6	Very limiting
Finding a rice processor.	1	2	3	4	5	6	7	
Finding a buyer.	1	2	3	4	5	6	7	
Knowing when to harvest.	1	2	3	4	5	6	7	
Financial expense.	1	2	3	4	5	6	7	
Knowing where to harvest.	1	2	3	4	5	6	7	
Having proper equipment.	1	2	3	4	5	6	7	
Physical challenge.	1	2	3	4	5	6	7	
Finding a partner.	1	2	3	4	5	6	7	
Timing of the rice crop.	1	2	3	4	5	6	7	

Q18. Is there anything else that you would like to share with us about wild rice harvesting in Minnesota?

Thank you! Please return this questionnaire in the envelope provided.