



**Wild Rice (Manoomin)  
Abundance and Harvest  
in Northern Wisconsin in 2000**

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## **MANOOMIN (WILD RICE) ABUNDANCE AND HARVEST IN NORTHERN WISCONSIN IN 2000**

### **INTRODUCTION**

As part of its wild rice management program, the Great Lakes Indian Fish and Wildlife Commission (GLIFWC) conducts annual surveys of wild rice abundance on northern Wisconsin waters. These surveys provide a long term data base on wild rice abundance and annual variability in the ceded territory.

GLIFWC also conducts an annual survey to estimate the amount of wild rice harvested off-reservation in the Wisconsin ceded territory. The Wisconsin Department of Natural Resources (WDNR) cooperates with this survey by providing the names and addresses of state wild rice harvest license purchasers, so that both state and tribal harvest can be estimated. The 2000 survey was similar in design to a survey first conducted in 1987, and repeated each year since 1989.

### **METHODS**

#### **Abundance Estimation**

A select group of thirty lakes and 10 river or flowage sites have been ground surveyed most years since 1985; abundance information from these waters is used to derive a yearly index of rice abundance in the ceded territory. The index is derived by multiplying the number of acres of rice on each water surveyed by a factor ranging from 1 to 5 which relates to rice density (1=sparse, 5=dense) and then summing the values derived for each of the 40 waters. In addition to abundance information, ground surveys include information on habitat suitability (e.g. abundance of competing vegetation, presence of beaver, obvious development impacts). Ground surveys were conducted from mid-July through mid-August.

Aerial surveys of some of these waters, and additional waters not ground surveyed, were conducted on August 4<sup>th</sup> and 10<sup>th</sup>. Aerial survey information is limited to an estimate of the size and approximate density of the rice beds. These surveys provide abundance information from waters not ground surveyed, help verify ground estimates of manoomin acreage, occasionally fill in survey gaps when ground crews are unable to access lakes, and help the Commission direct ricers to the more productive stands.

One lake, Rice Lake in Polk County, with an average abundance index of 188 (1985-1999) was not surveyed in 2000. Thus, when comparisons are made between 1999 and 2000, data for this lake was suppressed for 1999 as well. For comparisons between 2000 and long term averages, an index was estimated for this lake by applying the ratio between the long term overall index and the 2000 overall index (2408/5674) to the long term index for Rice Lake (188). This produced an estimated index of 80 for this water in 2000.

## Harvest Estimation

Slightly different techniques were used to estimate harvest by tribal and state ricers. Tribal members who wished to harvest rice off-reservation were required to obtain an off-reservation harvesting permit validated for ricing. This permit was obtained by 897 individuals in 2000. When individuals obtained their 2000 permit, they were asked if they harvested rice the previous year. Twenty-four percent (34/144) of the individuals who indicated they had riced in 1999 (“active” ricers) were surveyed by phone as well as eight percent (58/753) of the remaining permit holders (“inactive” ricers) (Table 1).

The number of tribal members actually harvesting off-reservation in 2000 was estimated by extrapolating the percent of active respondents in the active and inactive groups (Table 1). Since the “active” group reported harvesting appreciably more rice per license than the “inactive” group, separate harvest estimates were made for each group.

GROUP	TOTAL NUMBER	# SURVEYED	PERCENT SAMPLED	PERCENT ACTIVE OFF-RESERVATION	EST. # ACTIVE OFF-RESERVATION
“ACTIVE” <sup>1</sup>	144	34	24	44.1%	64
“INACTIVE” <sup>1</sup>	753	58	8	6.9%	52
TOTAL	897	92	-	-	116

<sup>1</sup> Based on activity the previous year; see discussion in text.

One tribal family, with 4 ricing licenses, that is known to be unique in its level of harvesting activity from previous years surveys, reported a harvest that far exceeded that of other tribal ricers. Because of this, the average harvest reported by all other active ricers was extrapolated to the other 60 estimated ricers in the active group, and this family’s harvest was added to that estimate to estimate the total harvest for the active group.

State ricers were required to obtain an annual ricing permit. A mail questionnaire was mailed to each of the 396 individuals who obtained a state ricing license. The number of active ricers and total harvest was estimated by expanding the results reported by the 219 (55%) respondents to the state survey.

## RESULTS AND DISCUSSION

### Abundance Estimation

Ground survey results and abundance information for the 40 waters surveyed annually are reported in Figures 1 and 2, and Table 2. In addition, abundance estimates for 49 additional waters surveyed only from the air are listed in Table 3. A total of 1,664 acres of wild rice were estimated for these 89 surveyed waters. Andryk (1986) estimated that the Wisconsin ceded

territories supported approximately 5,000 acres of rice in 1985, a year with an abundance index considerably higher than in 2000.

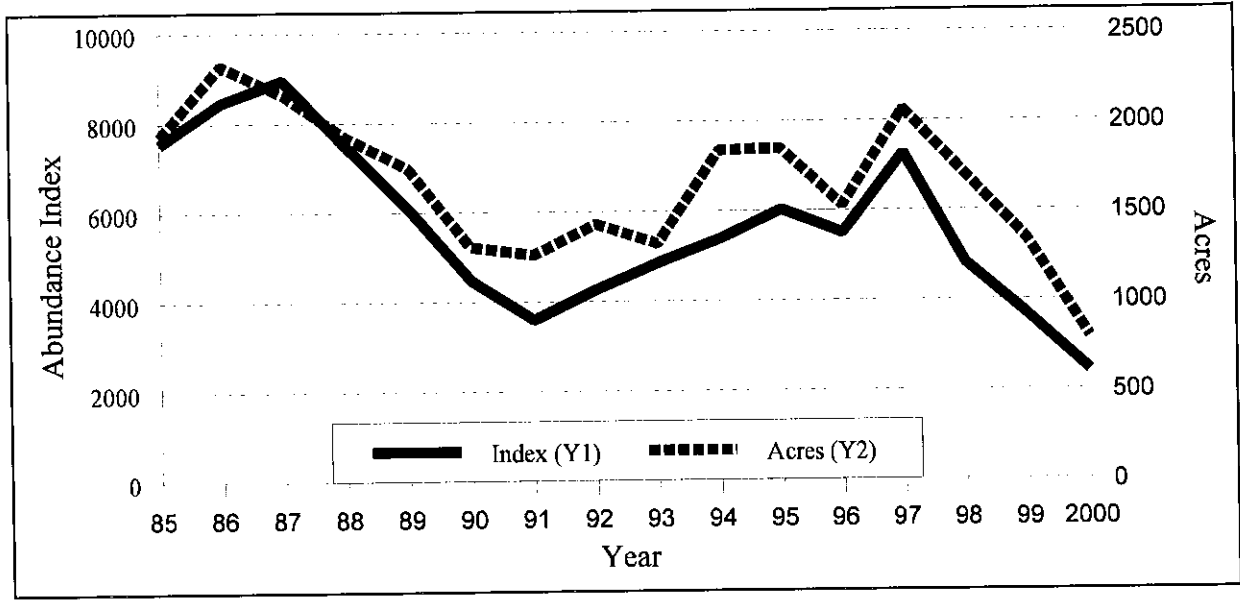


Figure 1. Manoomin acreage and abundance index from 40 Wisconsin rice waters surveyed annually from 1985-2000.

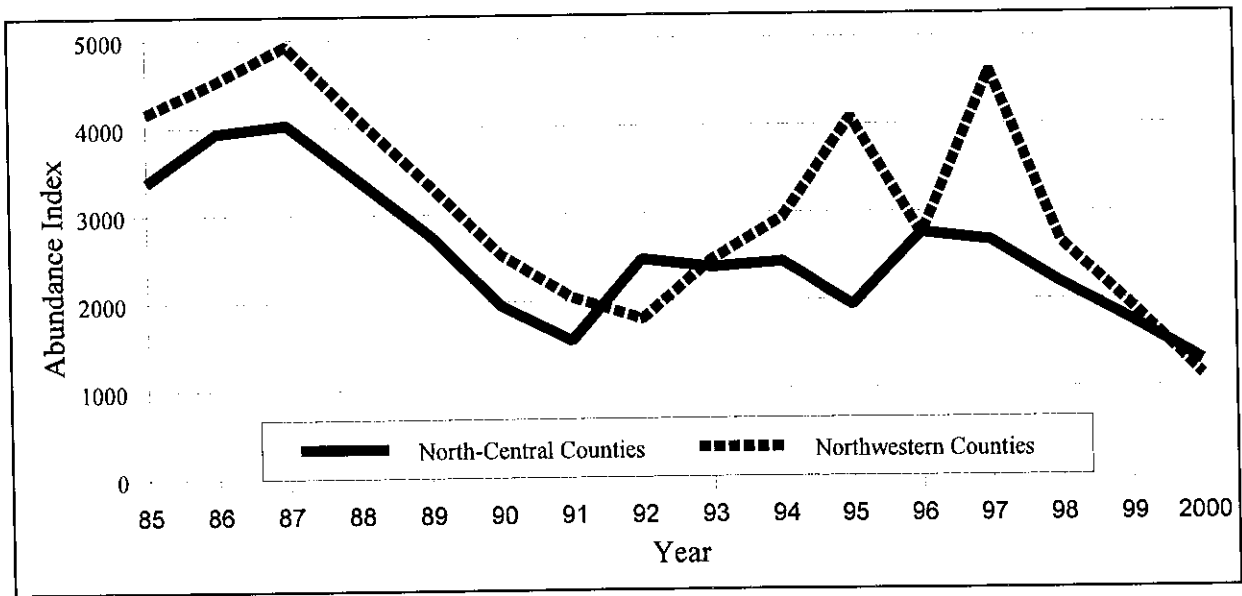


Figure 2. Manoomin abundance index from 40 Wisconsin rice waters surveyed annually from 1985-99; northwestern versus north-central Wisconsin waters (Highway 13 used to separate northwestern from north-central waters).

Table 2. Manoomin acreage, density and abundance index from 40 Wisconsin waters for 1997-2000, and the 1985-2000 means.  
(Data for 1985-1996 can be found in David, 2001.)  
(Index for Rice Lake, Polk County, year 2000 estimated; see text.)

WATER	1997			1998			1999			2000			1985-2000		
	ACRES	DEN.	INDEX	ACRES	DEN.	INDEX	ACRES	DEN.	INDEX	ACRES	DEN.	INDEX	MEAN ACRES	MEAN DEN.	MEAN INDEX
<b>NORTHWESTERN CTYS.</b>															
<b>BARRON</b>															
SWEENEY CREEK	15	3	45	8	4	32	3	3	9	5	2	10	11	2.7	42
<b>BAYFIELD</b>															
TOTOGATIC LAKE	440	4	1760	135	3	405	95	2	190	51	3	153	168	2.8	561
<b>BURNETT</b>															
BASHAW LAKE	8	3	24	2	3	6	4	2	8	7	1	7	13	2.6	36
BIG CLAM LAKE	200	3	600	210	3	630	180	4	720	31	2	62	152	3.6	540
BRIGGS LAKE	35	4	140	25	3	75	18	2	36	22	4	88	31	3.8	120
GASLYN LAKE	20	3	60	18	3	54	23	2	46	18	2	36	28	3.3	99
LONG LAKE	115	3	345	65	2	130	40	2	80	20	1	20	81	2.5	210
MUD LAKE (2)	18	4	72	11	3	33	6	3	18	6	3	18	14	3.5	50
WEBB CREEK	10	5	50	12	4	48	16	3	48	20	5	100	11	3.8	54
<b>DOUGLAS</b>															
MULLIGAN LAKE	13	2	26	10	2	20	16	2	32	15	4	60	26	1.9	56
<b>POLK</b>															
RICE BED CREEK	10	5	50	8	4	32	6	3	18	4	4	16	10	4.6	49
RICE LAKE (1)	80	2	160	15	1	15	15	2	30			80*	53	3.3	188
WHITE ASH LAKE	16	5	80	14	3	42	10	4	40	8	2	16	14	3.1	46
<b>SAWYER</b>															
BILLY BOY FLOW.	2	1	2	0	0	0	3	1	3	5	2	10	15	2.1	49
BLAISDELL LAKE	110	3	330	100	4	400	75	2	150	30	3	90	75	3.1	245
PACWAWONG LAKE	115	4	460	100	4	400	67	3	201	48	4	192	86	3.6	326
PHIPPS FLOWAGE	38	5	190	35	4	140	24	4	96	19	4	76	34	4.1	134
<b>WASHBURN</b>															
DILLY LAKE	24	4	96	24	3	72	30	4	120	21	4	84	23	4.2	97
POTATO LAKE	13	2	26	12	3	36	9	3	27	12	2	24	13	3.0	39
RICE LAKE	19	3	57	14	2	28	10	3	30	14	4	56	27	3.4	100
SPRING LAKE (1)	15	2	30	14	3	42	5	3	15	0	0	0	17	3.1	60
TRANUS LAKE	4	1	4	8	1	8	2	2	4	2	1	2	43	1.4	69
<b>SUBTOTAL</b>	<b>1320</b>		<b>4607</b>	<b>840</b>		<b>2648</b>	<b>657</b>		<b>1912</b>	<b>358</b>		<b>1120</b>	<b>932</b>		<b>3121</b>
<b>NORTH-CENTRAL CTYS.</b>															
<b>FOREST</b>															
ATKINS LAKE	0	0	0	0	0	0	0	0	0	0	0	0	24	0.9	69
INDIAN/RILEY LAKE	2	3	6	4	3	12	5	3	15	7	3	21	5	2.9	13
PAT SHAY LAKE	100	2	200	100	1	100	60	2	120	4	1	4	53	1.4	86
RAT RIVER	24	5	120	24	4	96	21	4	84	16	4	64	22	4.6	102
WABIKON LAKE	50	3	150	80	3	240	30	2	60	24	2	48	40	2.4	100
<b>LINCOLN</b>															
ALICE LAKE	45	3	135	50	1	50	20	3	60	24	3	72	56	3.1	202
<b>ONEIDA</b>															
FISH LAKE	9	4	36	40	4	160	58	2	116	10	2	20	41	3.6	150
LITTLE RICE LAKE	0	0	0	0	0	0	0	0	0	0	0	0	10	1.8	39
RICE LAKE	100	1	100	100	1	100	100	1	100	60	1	60	74	1.4	137
SPUR LAKE	85	4	340	95	4	380	56	3	168	25	1	25	78	3.5	318
WISCONSIN RIVER	140	5	700	150	3	450	180	3	540	165	4	660	145	4.5	634
<b>PRICE</b>															
BLOCKHOUSE LAKE	28	3	84	28	2	56	2	2	4	4	1	4	22	3.2	79
<b>VILAS</b>															
ALLEQUASH LAKE	75	5	375	80	3	240	60	3	180	40	3	120	79	4.1	333
LITTLE RICE LAKE	8	5	40	20	3	60	16	3	48	4	3	12	10	2.3	27
MANITOWISH RIVER	14	5	70	15	3	45	16	4	64	14	5	70	16	4.3	72
PARTRIDGE LAKE	22	5	110	27	3	81	17	4	68	21	4	84	20	4.3	90
RICE LAKE	20	5	100	25	3	75	20	4	80	10	2	20	22	3.3	70
WEST PLUM LAKE	20	5	100	14	2	28	20	2	40	2	2	4	25	3.4	87
<b>SUBTOTAL</b>	<b>742</b>		<b>2666</b>	<b>852</b>		<b>2173</b>	<b>681</b>		<b>1747</b>	<b>430</b>		<b>1288</b>	<b>723</b>		<b>2553</b>
COUNT:			40			40			40			39			
<b>TOTAL:</b>	<b>2062</b>		<b>7273</b>	<b>1692</b>		<b>4821</b>	<b>1338</b>		<b>3659</b>	<b>788</b>		<b>2488</b>	<b>1655</b>		<b>5674</b>
AVERAGE:			182			121			91			62			

Table 3. Estimated manoomin acreage and density for waters aerially surveyed in 2000.					
COUNTY	WATER	2000 EST. ACRES	2000 EST. DENSITY	1999 EST. ACRES	1999 EST. DENSITY
Barron	Bear Lake	12	medium	9	sparse-medium
Bayfield	Chippewa Lake	20	sparse-dense	not surveyed	not surveyed
Burnett	Carter's Bridge - Loon Lake	70	dense	70	dense
	- Gull Lake	35	medium	45	medium-dense
	Clam River Flowage	42	dense	38	dense
	North Fork Flowage	45	dense	35	dense
	North Lang Lake	3	medium-dense	3	medium-dense
	Phantom Flowage	50	medium-dense	30	sparse-dense
	Rice Lake <sup>1</sup>	7	medium	5	sparse-medium
	Rice Lake <sup>2</sup>	7	medium-dense	5	medium
	Rice Lake <sup>3</sup>	2	sparse	1	sparse
	Spencer Lake	2	sparse	6	dense
Yellow Lake	12	sparse-medium	15	sparse-medium	
Douglas	Lower Ox Lake	7	medium	7	medium-dense
	Minong Flowage (Smiths Bridge)	6	medium	40	medium-dense
	Radigan Flowage	16	medium	8	medium-dense
	St.Croix River/Cutaway Dam	4	medium-dense	5	medium
	Upper Ox Lake	7	dense	6	dense
Forest	Hiles Millpond	3	sparse-medium	4	sparse-medium
	Little Rice Lake	20	medium	40	sparse-dense
Iron	Gile Flowage	3	medium-dense	not surveyed	not surveyed
	Little Turtle Flowage	8	dense	8	dense
Oneida	Big Lake	11	dense	10	medium-dense
	Cuenin Lake	12	medium	25	medium-dense
	Scott Creek Impoundment	6	medium-dense	5	medium
	The Thoroughfare	90	medium-dense	80	medium-dense
	Wolf River <sup>4</sup>	14	dense	12	dense
Polk	Joel Flowage	16	medium	13	medium-dense
	Little Butternut	6	medium	8	medium-dense
	Rice Lake <sup>5</sup>	2	sparse	0	-
Sawyer	West Branch Chippewa River	18	medium-dense	14	medium
Vilas	Aurora Lake	62	medium-dense	62	medium-dense
	Devine Lake	4	medium-dense	6	sparse-dense
	Frost Lake	13	medium	15	medium-dense
	Irving Lake	40	medium-dense	40	sparse-medium
	Island Lake	40	medium-dense	22	sparse-medium
	Lower Ninemile Lake	8	medium-dense	8	medium-dense
	Mickeys Mud Lake	0	-	3	medium
	Mud Creek <sup>6</sup>	22	medium-dense	16	medium-dense
	Nixon Lake / Creek	4	dense	4	medium-dense
	Rest Lake	4	medium-dense	4	dense
	Rice Creek <sup>7</sup>	10	dense	8	dense
	Rice Creek <sup>8</sup>	12	medium	12	medium
	Round Lake	4	medium-dense	6	dense
Upper Ninemile Lake	60	medium-dense	45	sparse-dense	
Washburn	Long, Mud, & Little Mud Lakes	30	medium-dense	30	medium-dense
	Trego Flowage	7	medium-dense	14	medium-dense

<sup>1</sup> NE of Trade Lake, (T37N, R18W, S10); <sup>2</sup> NE of Hertel, (T39N, R14W, S15); <sup>3</sup> W of Frederic, (T37N, R18W, S36);

<sup>4</sup> NW of Lennox; <sup>5</sup> NW of Frederic; <sup>6</sup> E of HWY 17; <sup>7</sup> N of Big Lake; <sup>8</sup> N of Island Lake

Survey results and field observations indicate that 2000 was an exceptionally poor year for wild rice across the state. The 2000 abundance index decreased 34% from 1999, a poor year itself, to the lowest level observed since surveys were initiated (Table 2). The 2000 index was 44% of the long-term index average (1985-2000). Marked declines were noted in the indices for both northwestern and north-central waters (Figure 2). For northwestern waters, most of the decline was attributable to the near total failure at Clam Lake, which normally supports some of the larger rice beds in the state. The decline among the north-central waters was more evenly distributed, with 13 of 18 waters showing stable or decreasing indices. Overall, 20 of the 39 waters surveyed showed a decline from 1999, 10 showed an increase and 9 were essentially unchanged.

It remains difficult to determine why rice changes in abundance on either the regional or local scale because the environmental factors that influence abundance are not well understood. Wild rice is affected by a variety of factors, and the relative impact of each varies by year. Some of these factors, such as spring temperatures and water levels, can affect rice regionally, and may account for instances where beds in the north-central counties display one trend in abundance while those in the northwestern region may show another. At the other extreme, a localized impact can cause a stand to fail while those around it flourish. Furthermore, those factors that might explain some of the variation in rice abundance are not being monitored systematically. Thus, explanations about changes in rice abundance remain largely a matter of conjecture.

Annual variability in rice abundance may be inversely related to the amount of water flow through the system. Relatively open systems such as rivers and flowages appear to vary less in rice abundance than relatively closed lake systems. Although open systems may still experience boom and bust years, the level of abundance tends to be closer to the average level most years. This may be because some environmental variables, such as nutrient availability or spring water temperatures, are more consistent in these systems from year to year.

## **Harvest Estimation**

Responses were obtained from 92 tribal permit holders and 219 state licensees. Survey respondents were asked to report all harvest which occurred under their permit. For state licensees, this included on-and off-reservation harvest; for tribal members it included only off-reservation harvest, since no permit is required to harvest on-reservation. Nineteen of the tribal and 190 of the state licensees surveyed reported harvesting rice in 2000. The total number estimated active in each group was 116 tribal members and 344 state licensees (Table 4).

Tribal harvesters active off-reservation reported making from 1 to 20 ricing trips, averaging 2.3 trips. Tribal survey respondents made a total of 109 off-reservation harvesting trips, gathering 7,173 pounds of green rice (Appendix 1), with an extrapolated total harvest estimate of 14,925 pounds in 268 trips, an average of 56 pounds per trip (Table 4). The total off-reservation harvest per active license averaged 129 pounds.

	NUMBER OF PERMIT HOLDERS	ESTIMATED NUMBER ACTIVE	AVERAGE NUMBER OF TRIPS	AVERAGE HARVEST/ TRIP	AVE. HARVEST/ ACTIVE LICENSE	TOTAL ESTIMATED HARVEST / TRIPS
TRIBAL	897	116	2.3	56	129	14,925 / 268
STATE	396	344	2.6	31	81	27,698 / 881
TOTAL	1,293	460	2.5	37	93	42,623 / 1,149

In comparison, active state licensees reported making from 1 to 23 ricing trips, averaging 2.6 trips. Collectively, state survey respondents made 487 trips and harvested a total of 15,303 pounds of green rice (Appendix 1), an average of 31 pounds per trip. The total harvest per active state license averaged 81 pounds (Table 4).

The amount of rice harvested per individual varied greatly (Table 5). A single state ricer reported harvesting 2,700 pounds, while the unique tribal family mentioned above reported harvesting 5,675 pounds under 4 permits.

Eighty-seven percent of the state-licensed respondents gathered rice in 2000, versus 14% for the tribes. Differences in permit systems between the two groups accounts for the different activity levels observed. The tribal ricing permit is a simple check-off category on a general natural resources harvesting permit available at no cost to tribal members. The category is frequently checked by individuals whose primary interest is one of the other harvest activities listed on the permit. The state permit is a unique license available for a fee, and thus is rarely obtained by individuals without a strong intention of ricing. The tribal activity rate is also lowered because members are asked to respond only if they harvested rice off-reservation. When on-reservation rice beds have good stands, many tribal ricers concentrate their efforts there.

The data collected in this survey can be used to estimate off-reservation harvest by tribal permit holders, and both total and off-reservation harvest by state licensees. It cannot be used to estimate on-reservation harvest by tribal members, who are not required to have a permit to harvest on-reservation.

Using the approach to estimate harvest described above in the Methods section, total off-reservation harvest for tribal permit holders was estimated at 14,925 pounds of green rice (Table 4). The total harvest for state permittees was estimated at 27,698 pounds, with all but 290 pounds of it coming from off-reservation waters. Thus, the total off-reservation harvest was estimated at 42,333 pounds, with tribal ricers accounting for 35% of the harvest.

This harvest estimate is nearly identical to the 1999 off-reservation harvest estimate of 42,752 pounds (David, 2001), with both the state and tribal harvest estimates being very similar between years. Manoomin harvest tends to vary with abundance as well as other factors (Figure 3).



Table 5. Distribution of harvest among active respondents to the 2000 harvest survey.			
TRIBAL			
POUNDS OF GREEN RICE HARVESTED	INDIVIDUALS		PERCENT OF TOTAL HARVEST
	NUMBER	PERCENT	
0 - 50	5	26.3	2.4
51 - 100	4	21.1	4.7
101 - 150	4	21.1	6.6
151 - 200			
201 - 300	2	10.5	7.2
301 - 500			
501 - 1000			
1001 +	4	21.1	79.1
STATE			
POUNDS OF GREEN RICE HARVESTED	INDIVIDUALS		PERCENT OF TOTAL HARVEST
	NUMBER	PERCENT	
0 - 50	119	62.6	16.9
51 - 100	40	21.1	20.5
101 - 150	13	6.8	10.4
151 - 200	9	4.7	10.9
201 - 300	3	1.6	4.2
301 - 500	1	0.5	2.1
501 - 1000	4	2.1	17.4
1001 +	1	0.5	17.6

The distribution of ricing effort and harvest has tended to reflect the distribution of rice waters in the state, and the abundance of rice on those waters (Figure 4). Sixty-seven waters were reported riced in 2000, down from the over eighty waters reportedly riced in 1999, perhaps reflecting the poor crop. Nearly all (99%) of the harvest reported by surveyed state licensees came from waters within the ceded territory (Appendix 1). Approximately 32% of the harvest reported by specific location (i.e. harvest from “unnamed” waters excluded) by respondents to the 2000 harvest survey came from sites planted by the WDNR, the U.S. Forest Service, GLIFWC, or other seeding cooperators.

### Opinions of Respondents

**Annual abundance:** Individuals were asked if they felt the 2000 wild rice crop was better, the same, or worse than the 1999 crop. Among the 144 active respondents with an opinion, 64% felt 2000 was worse than 1999, 21% felt both years were about the same, and just 15% were of the opinion that 2000 was better than 1999. Several individuals commented that it was not just worse, but “far worse” or “terrible”, and some who felt both years were about the same noted that both were very poor. It appeared that those who felt 2000 was the better year tended to rice only one or two waters that had good stands that year.

These opinions were fairly similar to the results from the abundance surveys of 40 rice waters discussed above, which found declines in abundance on 51% of the waters, little change in abundance on 23% of the waters, and increases on 26%.

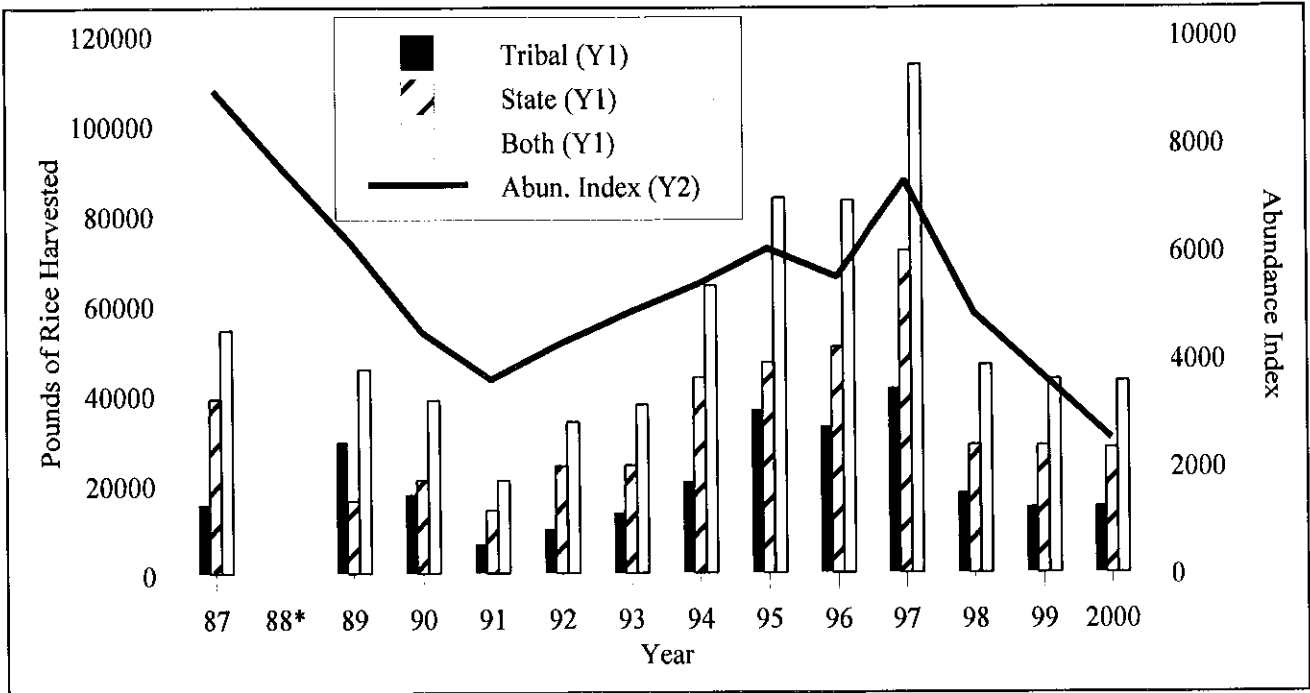


Figure 3. Harvest trends versus abundance index, 1987-2000 (\* no harvest estimates for 1988).

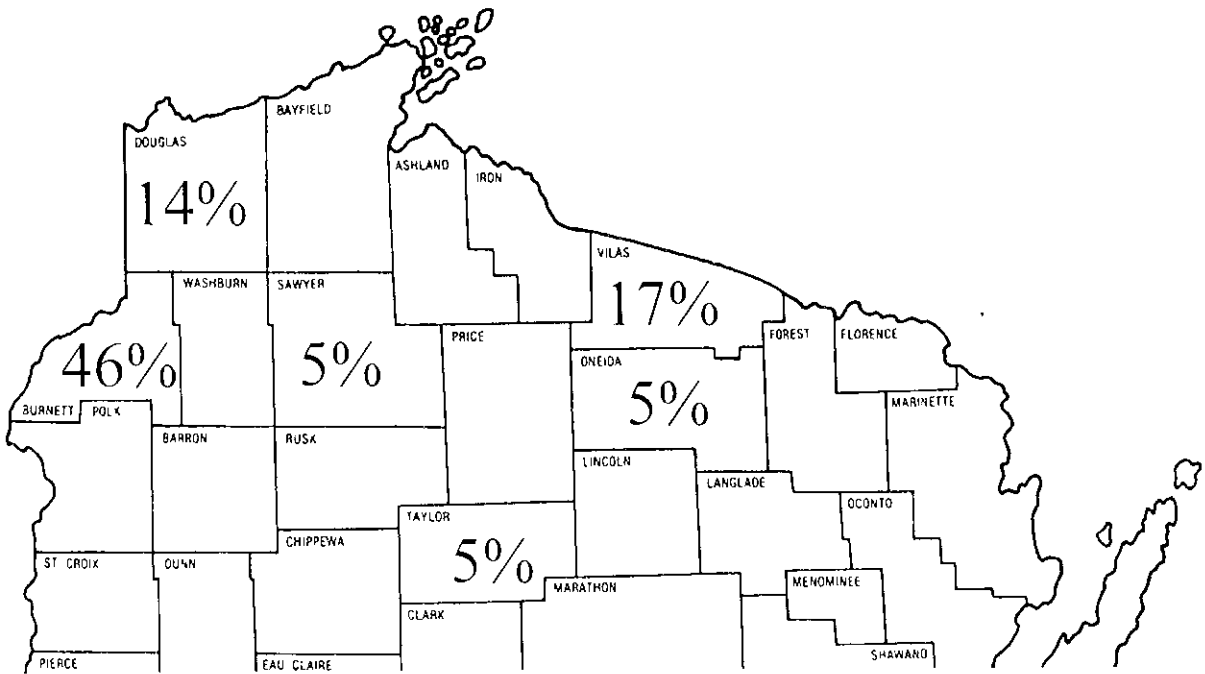


Figure 4. Distribution of counties accounting for 5% or more of the manoomin harvest reported by respondents to the 2000 harvest survey, tribal and state harvesters combined.

**Comments:** Respondents offered a variety of comments and opinions, although relatively few consistent themes surfaced.

Nine individuals indicated that early rain and hail storms damaged the beds or limited their harvest, and another commented on the overall very poor crop. Two felt the crop was very wormy, and one indicated that plants were shorter than average this year. One noted that the crop was the poorest he had witnessed in over 20 years of ricing.

Several waters were specifically mentioned as needing “help”, including Bear Lake (Barron); Long Lake (Burnett); Mud Lake (Oakland Twn, Burnett), where a culvert setting was thought to be a problem, and Blockhouse Lake (Price) where the respondent wondered if the aerator which had been installed on that lake may have been detrimental to the rice. Four individuals commented on how well the seeding effort at Crex Meadows Wildlife Area was proceeding, and two individuals indicated seeding rice, one at the Gresham Chain in Vilas County (13 pounds, source not stated), and one on the “Rust Flowage near Drummond,” Bayfield County (using “*a little rice from Dilly*”).

Comments related to regulations included three people who felt lake posting needed to be improved, and three who felt lake opening information needed to be more easily available. Two felt that Aurora Lake (Vilas) opened too early. One suggested adding a space on the lake posting sign to indicate the year, a change that was made for the 2001 season.

Finally, one individual shared the following: “*We “donated” the harvested rice to the bottom of the lake, having flipped the canoe. Man, Allequash has one mucky bottom. Let us know if the canoe paddle ever does float to the surface!*”

**Potential Waters for Seeding:** Respondents suggested 22 different waters which might be candidates for seeding. Sites named are listed in Appendix 2.

## LITERATURE CITED

- Andryk, T. 1986. Wild rice wetland inventory of northwest Wisconsin. Great Lakes Indian Fish and Wildlife Commission Administrative Report 86-4. 51 pp.
- David, P.F. 2001. Wild rice abundance and harvest in the Wisconsin Ceded Territories in 1999. Great Lakes Indian Fish and Wildlife Commission Administrative Report 01-02. 16 pp.

Appendix 1. Ricing trips and pounds of green manoomin harvested by respondents to the 2000 harvest survey.							
COUNTY	WATER	TRIBAL		STATE		COMBINED TOTAL	
		TRIPS	POUNDS	TRIPS	POUNDS	TRIPS	POUNDS
ASHLAND	KAKAGON SLOUGHS			4	160	4	160
	<b>Subtotal</b>			<b>4</b>	<b>160</b>	<b>4</b>	<b>160</b>
BARRON	BEAR LAKE			19	246	19	246
	<b>Subtotal</b>			<b>19</b>	<b>246</b>	<b>19</b>	<b>246</b>
BAYFIELD	CHIPPEWA LAKE			5	119	5	119
	TOTOGATIC LAKE			4	85	4	85
	<b>Subtotal</b>			<b>9</b>	<b>204</b>	<b>9</b>	<b>204</b>
BURNETT	BLACK BROOK FLOWAGE			3	51	3	51
	BRIGGS LAKE	4	230	10	600	14	830
	CARTERS BRIDGE	1	50	6	210	7	260
	CLAM FLOWAGE			29	959	29	959
	CLAM RIVER			4	70	4	70
	GASLYN LAKE			3	0	3	0
	HAY CREEK FLOWAGE			1	3	1	3
	MUD HEN LAKE			3	55	3	55
	NORTH FORK FLOWAGE			7	314	7	314
	NORTH LANG LAKE			1	10	1	10
	PHANTOM FLOWAGE	3	120	83	3,805	86	3,925
	UNNAMED WATER	54	3,800	2	27	56	3,827
	YELLOW LAKE			1	49	1	49
	YELLOW RIVER			2	44	2	44
	<b>Subtotal</b>	<b>62</b>	<b>4,200</b>	<b>155</b>	<b>6,197</b>	<b>217</b>	<b>10,397</b>
DOUGLAS	BEAR LAKE			1	5	1	5
	MINONG FLOWAGE	1	45	15	180	16	225
	MULLIGAN LAKE	1	35	5	125	6	160
	RADIGAN FLOWAGE	1	80	10	395	11	475
	ST. CROIX FLOWAGE			2	45	2	45
	ST. CROIX RIVER	1	85	3	112	4	197
	UPPER OX LAKE			2	85	2	85
	UNNAMED WATER	26	1,875	1	15	27	1,890
	<b>Subtotal</b>	<b>30</b>	<b>2,120</b>	<b>39</b>	<b>962</b>	<b>69</b>	<b>3,082</b>
DUNN	UNNAMED WATER			2	42	2	42
	<b>Subtotal</b>			<b>2</b>	<b>42</b>	<b>2</b>	<b>42</b>
FOREST	LITTLE RICE FLOWAGE			1	12	1	12
	RAT RIVER			1	2	1	2
	WABICON LAKE			1	6	1	6
	<b>Subtotal</b>			<b>3</b>	<b>20</b>	<b>3</b>	<b>20</b>
IRON	LITTLE TURTLE FLOW.	3	120	5	50	8	170
	<b>Subtotal</b>	<b>3</b>	<b>120</b>	<b>5</b>	<b>50</b>	<b>8</b>	<b>170</b>
LANGLADE	MINIWAUKAN LAKE			1	98	1	98
	<b>Subtotal</b>			<b>1</b>	<b>98</b>	<b>1</b>	<b>98</b>
LINCOLN	WISCONSIN RIVER			4	30	4	30
	<b>Subtotal</b>			<b>4</b>	<b>30</b>	<b>4</b>	<b>30</b>
MARQUETTE	NESHKORO MILLPOND			7	105	7	105
	<b>Subtotal</b>			<b>7</b>	<b>105</b>	<b>7</b>	<b>105</b>

(Appendix 1 continued on the next page.)

Appendix 1. Ricing trips and pounds of green manoomin harvested by respondents to the 2000 harvest survey.							
COUNTY	WATER	TRIBAL		STATE		COMBINED TOTAL	
		TRIPS	POUNDS	TRIPS	POUNDS	TRIPS	POUNDS
ONEIDA	BIG LAKE			3	100	3	100
	BIG LAKE THOROUGHFARE	2	130	15	950	17	1,080
	<b>Subtotal</b>	<b>2</b>	<b>130</b>	<b>18</b>	<b>1,050</b>	<b>20</b>	<b>1,180</b>
POLK	JOEL FLOWAGE			10	319	10	319
	LT. BUTTERNUT LAKE			7	52	7	52
	UNNAMED WATER			3	0	3	0
	<b>Subtotal</b>			<b>20</b>	<b>371</b>	<b>20</b>	<b>371</b>
PRICE	BLOCKHOUSE LAKE			1	0	1	0
	LOWER STEVE CK. FLOW.			1	25	1	25
	SPRING CREEK			4	11	4	11
	WILSON FLOWAGE			4	120	4	120
	<b>Subtotal</b>			<b>10</b>	<b>156</b>	<b>10</b>	<b>156</b>
RUSK	FIRESIDE LAKE	1	5			1	5
	<b>Subtotal</b>	<b>1</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>5</b>
SAWYER	CHIPPEWA RIVER			1	20	1	20
	NAMEKAGON RIVER			3	25	3	25
	NELSON LAKE			1	35	1	35
	PACWAWONG LAKE	5	298	29	415	34	713
	PHIPPS FLOWAGE	4	200	8	133	12	333
	UNNAMED WATER			2	0	2	0
	<b>Subtotal</b>	<b>9</b>	<b>498</b>	<b>44</b>	<b>628</b>	<b>53</b>	<b>1,126</b>
TAYLOR	CHEQUAMEGON WATERS FLOW.			9	262	9	262
	MONDEAUX FLOWAGE			16	826	16	826
	<b>Subtotal</b>			<b>25</b>	<b>1,088</b>	<b>25</b>	<b>1,088</b>
VILAS	ALLEQUASH LAKE	1	30	12	136	13	166
	AURORA LAKE	1	70	26	531	27	601
	EAGLE LAKE			1	36	1	36
	IRVING LAKE			17	457	17	457
	ISLAND LAKE			3	131	3	131
	MANITOWISH RIVER			10	99	10	99
	MANN FLOWAGE			1	5	1	5
	NIXON CREEK/LAKE			2	10	2	10
	PLUM LAKE			1	20	1	20
	RICE CREEK			6	125	6	125
	RICE LAKE			3	33	3	33
	UPPER NINEMILE FLOWAGE			23	2,250	23	2,250
	<b>Subtotal</b>	<b>2</b>	<b>100</b>	<b>105</b>	<b>3,833</b>	<b>107</b>	<b>3,933</b>
	WASHBURN	DILLY LAKE			4	15	4
LONG LAKE				1	2	1	2
MUD LAKE				2	8	2	8
POTATO CREEK				2	8	2	8
ROCKY RIDGE LAKE				3	20	3	20
YELLOW RIVER				2	5	2	5
<b>Subtotal</b>			<b>14</b>	<b>58</b>	<b>14</b>	<b>58</b>	
WAUSHARA	SAXVILLE POND			3	5	3	5
	<b>Subtotal</b>			<b>3</b>	<b>5</b>	<b>3</b>	<b>5</b>
<b>GRAND TOTAL</b>		<b>109</b>	<b>7,173</b>	<b>487</b>	<b>15,303</b>	<b>596</b>	<b>22,476</b>

Appendix 2. Waters suggested for seeding by respondents to the 2000 wild rice harvest survey.	
COUNTY	WATER
Ashland	Prentice Park
Barron	Hemlock Lake at Bolger Flowage inlet Lake Montanis (suggested twice)
Bayfield	Namekagon River, above dam on Namekagon Lake Rust Flowage, near Drummond Siskiwit Lake
Burnett	Amsterdam Sloughs Yellow River
Douglas	Allouez Bay Muskrat Lake Pokegema Bay St. Croix Flowage
Marathon	McMillian Marsh
Polk	Long Trade Lake Lotus Lake (suggested twice)
Price	Sailor Lake
Richland	Lower Wisconsin River
Sawyer	Mosquito Brook Creek/Flowage Smith Lake
Washburn	Davis Flowage Little Long Lake Yellow River Flowage near Spooner