



**Manoomin (Wild Rice)  
Enhancement and Research  
in the Ceded Territories in 1996**

by  
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## MANOOMIN (WILD RICE) ENHANCEMENT AND RESEARCH IN THE CEDED TERRITORIES - 1996

### INTRODUCTION

The Great Lakes Indian Fish and Wildlife Commission (GLIFWC) conducts a wild rice (*Zizania aquatica*) enhancement and research program in the territories ceded in the Treaties of 1836, 1837, 1842 and 1854. Most wild rice management projects are conducted cooperatively with other natural resource agencies. This report summarizes activities carried out under this program in 1996.

Manoomin has been a staple in the diet of native people in the upper Great Lakes region for over 1000 years (Johnson 1970). It has been an important component of the diet and the culture of the Ojibwe people since their immigration into the heart of wild rice range nearly 3 centuries ago (Vennum 1988). With the arrival of Europeans, wild rice also became an important economic commodity, providing critical nutrition to the fur-trappers and traders moving into the area. Today, manoomin retains extraordinary significance to the Chippewa, and is considered sacred food. The September moon is still referred to as the rice making moon (Manoominike Giizis), and the harvest season is still celebrated with traditional pow-wows.

In addition to its value to Native Americans, wild rice provides a valuable food source for wildlife, and its presence increases the biological diversity of wetlands. Wild rice can also improve water quality by tying up nutrients and by decreasing the wind action across lakes that can suspend particles and lead to water clarity and quality problems. Unfortunately, wild rice is much less abundant than it was historically.

The re-affirmation of off-reservation treaty rights has restored the Tribes' opportunity to manage wild rice in the ceded territories. The general objective for the enhancement program is to increase the amount of wild rice in the ceded territories through the reestablishment of historic beds and the development of new beds. In 1985, GLIFWC and the Wisconsin DNR cooperated in the first attempt to inventory wild rice beds in Wisconsin. In 1987, GLIFWC began off-reservation seeding activities by planting 200 pounds of seed in Pat Shay Lake, Vilas County, Wisconsin in cooperation with the Nicolet National Forest (NNF), and providing approximately 100 pounds of seed to the Wisconsin Department of Natural Resources (WDNR) for seeding on a state wildlife area. The seeding program grew gradually over the next several years, until it expanded significantly to 5775 pounds in 1991 (Figure 1) with funding support from the Bureau of Indian Affairs' Circle of Flight program. Nearly 3 or more tons of rice have been seeded annually since, including the seeding of nearly 6 tons of green seed in 1996, which is summarized below.

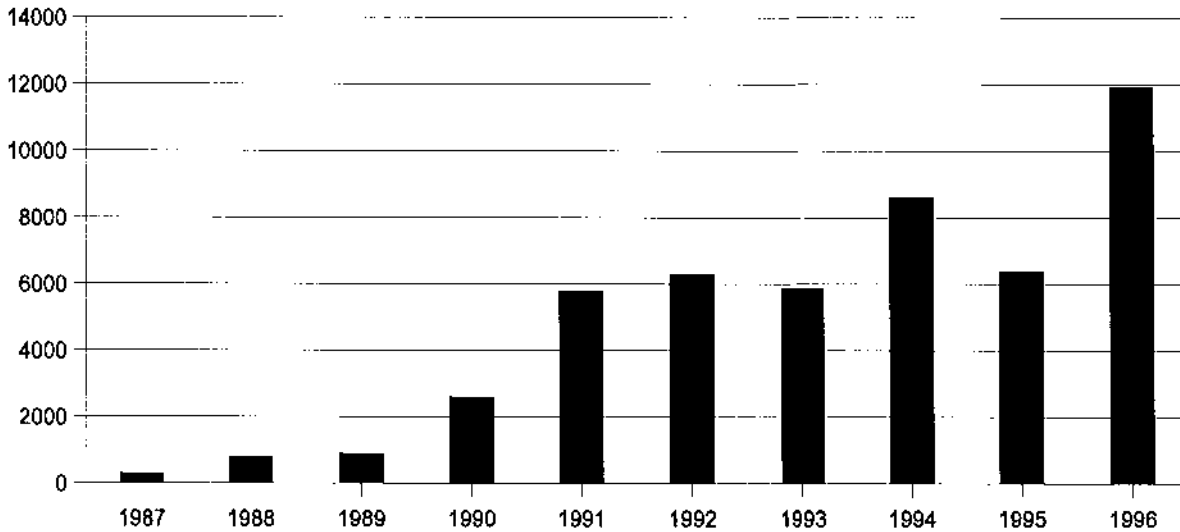


Figure 1. Pounds of wild rice seeded, 1987-1996.

## ENHANCEMENT

### Seeding Summary

In 1996, as in other recent years, GLIFWC concentrated its management efforts on purchasing locally harvested rice and distributing it to cooperators (listed below) who conducted the majority of the seeding. Seeding sites were selected by GLIFWC staff, member Tribes, cooperators, or some combination of the three. With the assistance of these cooperators a total of 11,927 pounds of wild rice was seeded in 53 waters in 10 Wisconsin and 4 Michigan counties.

### Cooperative Activities

GLIFWC's wild rice seeding program is a highly cooperative effort. Without the strong financial and manpower support of numerous partners, this important undertaking would be far less successful. The tribes' interest in this resource has acted as a catalyst, stimulating effective partnerships with other agencies sharing a concern for this resource. Cooperators in 1996 included GLIFWC member tribes, including the Lac Vieux Desert Band, the Keweenaw Bay Indian Community, the Bay Mills Community, the Bad River Band and the Red Cliff Band; federal agencies including the U.S. Fish and Wildlife Service (USFWS) and the Nicolet, Chequamegon and Ottawa National Forests; the Wisconsin Department of Natural Resources (WDNR), the Michigan Department of Natural Resources (MDNR) and the Silver Creek Sportsmans Club. The contributions of each of these cooperators on individual waters are summarized by project below.

## Seed Purchasing

Seed purchasing in 1996 was facilitated by a relatively abundant crop and good weather during the harvest period. The crop was generally good across the state, despite some notable exceptions such as Totogatic Lake in Bayfield County Wisconsin (David 1997). With these good conditions GLIFWC was able to purchase nearly 6 tons of seed, up significantly from 1995 (Figure 1). Seed purchased was harvested from at least 29 different waters, with the largest amounts coming from Clam Lake (Burnett County, WI, 1,808 pounds), Spur Lake (Oneida County, WI, 1,533 pounds), the Kakagon Sloughs (Ashland County, WI, 1,223 pounds), and Rice Lake (Forest County, WI, 1,170 pounds). All other waters supplied 600 pounds of seed or less.

## Seeding

Forty Wisconsin and thirteen Michigan waters received 11,927 pounds of seed under cooperative seeding ventures in 1996. Seeding was done at a rate of approximately 40 pounds per acre, so nearly 300 acres were seeded. Figure 2 displays the locations of seeded waters. All sites were seeded in the fall. Seeded sites will be surveyed in 1997 to evaluate the success of these efforts. Sites seeded were:

- 1-3) Name:** Fish Lake Wildlife Area Sites: Fish Lake, Dueholm Flowage, North Dike  
**Location:** Southwestern Burnett County  
**Cooperator:** WDNR  
**Seed Source:** Fish Lake: Yellow River, Burnett County (326 pounds) and Hay Creek (MN) (121 pounds); Ducholm Flowage: St. Croix River, Douglas County (191 pounds); North Dike: Loon Lake, Burnett County (59 pounds)  
**Summary:** Seed purchased by GLIFWC with funds from the Circle of Flight program (COF) and the WDNR was seeded at 3 sites on the Fish Lake Wildlife Area by the WDNR. This was the third year of seeding on Fish Lake and the second seeding on the other two waters. Success has been limited to date due to various water level problems, but additional effort is merited due to the success achieved at nearby stands and the historical record of rice existing on Fish Lake.
- 4-8) Name:** Crex Meadows Sites: Phantom Flowage, North Fork Flowage, Lower Hay Creek Flowage, Dike 2 Flowage and South Refuge (Refuge Extension) Flowage  
**Location:** Western Burnett County  
**Cooperator:** WDNR  
**Seed Source:** Phantom Flowage, North Fork Flowage and Lower Hay Creek Flowage: Sandy River Flowage, MN; Dike 2 Flowage: Clam Lake, Burnett County; South Refuge Flowage: Moosehorn River, MN  
**Summary:** Seed purchased by GLIFWC with funds from the COF program and the WDNR was seeded at 5 sites on the Crex Meadows Wildlife Area by the WDNR.

Phantom Flowage, South Refuge Flowage, and North Fork Flowage received 55, 35 and 30 pounds respectively to expand successful previous seedings. Lower Hay Creek and Dike 2 Flowage received 96 and 46 pounds respectively in new seeding attempts.

- 9) **Name:** Black Brook Flowage, Amsterdam Sloughs Wildlife Area  
**Location:** Central Burnett County  
**Cooperator:** WDNR  
**Seed Source:** Radigan Flowage, Douglas County WI  
**Summary:** 201 pounds of seed purchased by GLIFWC with COF and WDNR funds was seeded by the WDNR. This was an effort to expand a small bed started by a seeding of 50 pounds in 1993.
- 10) **Name:** Yellow River  
**Location:** East-central Burnett County  
**Cooperator:** WDNR  
**Seed Source:** Breda Lake, MN (76 pounds) and Big Rice Lake, MN (23 pounds)  
**Summary:** 99 pounds of seed purchased by GLIFWC with COF and WDNR funds was seeded by the WDNR in the first planting along a stretch of the river below Rice Lake that historically supported rice.
- 11-13) **Name:** Red Cliff Reservation sites: Raspberry River, Bradum Marsh (Hatchery wetland), and Eagle Bay Beaver Ponds  
**Location:** Northeastern Bayfield County  
**Cooperator:** Red Cliff Band of Lake Superior Chippewas  
**Seed Source:** Raspberry River: Cranberry Creek, Washburn County (72 pounds), Clam Lake, Burnett County (55 pounds), Rice Lake Washburn County (45 pounds), Daily Pond, Langlade County (54 pounds); Bradum Marsh: Sandy River, MN (16 pounds), Big Rice, MN (76 pounds), Pacwawong, Sawyer County (37) pounds, Clam Lake, Burnett County (60 pounds), Daily Pond, Langlade County (56 pounds); Eagle Bay Beaver Ponds: 200 pounds, unknown northwest Wisconsin area source.  
**Summary:** All three sites were in their second or third year of seeding and all have shown some successful establishment, although Red Cliff staff report that muskrats may be limiting the success at the Raspberry River site.
- 14) **Name:** Chequamegon Bay  
**Location:** East-central Bayfield County  
**Cooperator:** WDNR  
**Seed Source:** Kakagon Sloughs, Ashland County WI (150 pounds), Spur Lake, Oneida County (23 pounds)  
**Summary:** 176 pounds of seed was purchased with COF funds and seeded by GLIFWC in the third seeding of this Lake Superior bay. An area near the southwest terminus of the bay, north of the Highway 2 "Long Bridge" was selected. This seeding was done in

conjunction with a WDNR/UW-Stevens Point study into the feasibility of re-establishing vegetation in the bay. A small bed was produced by the earlier efforts, but relatively high water levels on Lake Superior may be limiting establishment.

- 15) **Name:** Kakagon Sloughs  
**Location:** Northern Ashland County  
**Cooperator:** Bad River Band of Chippewa Indians  
**Seed Source:** Kakagon Sloughs, Ashland County WI  
**Summary:** 225 pounds of locally harvested rice was purchased with COF funds and seeded in the Kakagon by the Bad River Band in an effort to restore areas which have had poor crops in recent years.
  
- 16) **Name:** Gile Flowage (northeast bay)  
**Location:** North-central Iron County  
**Cooperator:** WDNR  
**Seed Source:** Big Rice Lake, MN (146 pounds) and Sandy River, MN (118 pounds)  
**Summary:** 264 pounds of seed purchased by GLIFWC with WDNR and COF funds was seeded by the WDNR in the initial seeding of this water. The rice was planted into the northeast bay of this flowage adjacent to HWY 2, which now has a separate water level control structure.
  
- 17) **Name:** Chippewa Lake  
**Location:** Southeast Bayfield County  
**Cooperator:** Chequamegon National Forest  
**Seed Source:** Big Rice Lake MN (135 pounds), Sandy River, MN (114 pounds)  
**Summary:** 249 pounds of rice purchased by GLIFWC with USFS and COF funds was seeded by the USFS in the initial seeding attempt on this historic rice water.
  
- 18) **Name:** Hay Lake  
**Location:** Northern Price County  
**Cooperators:** WDNR, USFS  
**Seed Source:** Spur Lake, Oneida Co. WI (92 pounds), Moosehorn River MN (123 pounds), Balsam Creek, MN (81 pounds), Mondeaux Flowage, Taylor County (74 pounds)  
**Summary:** 370 pounds of seed purchased by GLIFWC with WDNR and USFS funds was seeded by GLIFWC, USFS and the WDNR in the second seeding of this water. Several sparse beds resulted from the initial seeding.
  
- 19) **Name:** Upper Wilson Flowage  
**Location:** Northeastern Price County  
**Cooperators:** Chequamegon National Forest, USFWS

**Seed Source:** Mondeaux Flowage, Taylor County WI.

**Summary:** 280 pounds of seed purchased by GLIFWC with USFS and COF funds was seeded by the Chequamegon National Forest in the second seeding of this water.

- 20) **Name:** Lake McGee  
**Location:** Northeast Rusk County  
**Cooperator:** WDNR  
**Seed Source:** Big Rice Lake MN (25 pounds); Sandy Lake, MN (275 pounds); Sandy Flowage, MN (47 pounds)  
**Summary:** 347 pounds of rice purchased by GLIFWC with WDNR and COF funds was seeded by the WDNR in the initial seeding attempt on this rice water.
- 21) **Name:** Lower Steve Creek Flowage  
**Location:** Southwestern Price County  
**Cooperator:** WDNR  
**Seed Source:** Unknown northwest Wisconsin source  
**Summary:** 192 pounds of seed purchased by GLIFWC with WDNR and COF funds was seeded by the WDNR in the second seeding of this water. Several beds resulted from the initial seeding.
- 22) **Name:** Upper Steve Creek Flowage  
**Location:** Northwestern Taylor County  
**Cooperators:** Chequamegon National Forest, Silver Creek Sportsman's Club  
**Seed Source:** Mondeaux Flowage, Taylor County WI.  
**Summary:** **Summary:** 30 pounds of seed purchased by GLIFWC and cost shared by the Silver Creek Sportsman's Club and the USFWS was seeded on this flowage by the Chequamegon National Forest. This water apparently was seeded unsuccessfully in 1971; additional seeding in the past four years has produced a bed of 5-7 acres, which this seeding is intended to expand.
- 23) **Name:** Chequamegon Waters Flowage  
**Location:** West-central Taylor County  
**Cooperators:** Chequamegon National Forest, Silver Creek Sportsman's Club  
**Seed Source:** Mondeaux Flowage, Taylor County WI.  
**Summary:** 216 pounds of seed purchased by GLIFWC and cost shared by the Silver Creek Sportsman's Club and USFWS was seeded on this flowage by the Chequamegon National Forest. These sites were first seeded in 1990; the USFS reports that they have now produced approximately 50+ acres of thick beds, and are attracting lots of ducks and have provided human harvest. This seeding is an expansion into additional areas on this large flowage.



- 24-29) Name:** Clark County Sites: Horse Creek Flowage, Refuge Flowage, Washwood Flowage, Winx Flowage, Spruce Lake, Spruce Lake Pothole  
**Location:** Various Clark County Locations  
**Cooperator:** WDNR  
**Seed Source:** Horse Creek Flowage: Upper Nine Mile Flowage, Vilas County (15 pounds); Refuge Flowage: Big Lake Thoroughfare, Oneida County (25 pounds); Washwood Flowage: Big Lake Thoroughfare (55 pounds); Winx Flowage: Big Lake Thoroughfare and Spur Lake, Oneida County (107 pounds); Spruce Lake: Spur Lake (80 pounds); Spruce Lake Pothole: Upper Nine Mile Flowage (15 pounds)  
**Summary:** A total of 297 pounds of rice purchased by GLIFWC with WDNR and COF funds was seeded by the WDNR in the initial seeding attempts on these small flowages.
- 30-36) Name:** Mead Wildlife Area Flowages: North Townline, Teal, Smokey Hill, North Honey Island, North Rice Lake (Roundhole), Small Flowage 15 and Small Flowage 16 Flowages and North Rice Lake  
**Location:** South-Central Marathon County  
**Cooperator:** WDNR  
**Seed Source:** Seed from the following sources was mixed in these seedings: Spur Lake, Oneida County (397 pounds), Radigan Flowage, Douglas County (223 pounds), St. Croix River, Douglas County (268 pounds), Cranberry Creek, Washburn County (71 pounds), Upper Nine Mile Flowage, Vilas County (180 pounds) and The Big Lake Throughfare, Oneida County (80 pounds)  
**Summary:** 1219 pounds of seed purchased by GLIFWC with WDNR and COF funds was seeded on these waters by the WDNR roughly as follows: North Townline Flowage: 175 pounds; Teal Flowage: 300 pounds; Smokey Hill Flowage: 200 pounds; North Honey Island Flowage: 200 pounds; North Rice Lake 219 pounds; Small Flowage 15: 100 pounds; and Small Flowage 16: 25 pounds. The North Townline Flowage was originally seeded in 1995 and showed a fair initial take; Teal Flowage was also seeded in 1995 but showed little initial response. The other 5 sites were seeded for the first time.
- 37) Name:** Revolver Lake  
**Location:** Southeastern Forest County  
**Cooperator:** Nicolet National Forest  
**Seed Source:** Spur Lake, Oneida County, WI  
**Summary:** 90 pounds of rice purchased by GLIFWC and cost shared by the Nicolet National Forest and GLIFWC was seeded by the Nicolet in the second annual seeding attempt on this water.
- 38) Name:** Wabikon Lake  
**Location:** South-central Forest County

**Cooperator:** Nicolet National Forest  
**Seed Source:** Spur Lake, Oneida County, WI

**Summary:** 380 pounds of seed purchased by GLIFWC and cost shared by the Nicolet National Forest and GLIFWC was seeded by the Nicolet. This is the sixth and final seeding attempt on this large, historic rice lake; results remain inconclusive.

- 39) **Name:** Rat River  
**Location:** Southeastern Forest County  
**Cooperators:** Nicolet National Forest,  
**Seed Source:** Rice Lake, Forest County, WI (114 pounds); Wolf River, Oneida County, WI (76 pounds)  
**Summary:** 190 pounds of seed purchased by GLIFWC and cost shared by the Nicolet National Forest and GLIFWC was seeded by the Nicolet along a stretch of the river located 11 miles east-southeast of Laona. This is the seventh year that some portion of the river has been seeded. After an initially slow take, the rice has responded well; rice is now established in several patches on approximately 2 miles of the river.
- 40) **Name:** Knowles Creek Impoundment  
**Location:** Southeastern Forest County  
**Cooperator:** Nicolet National Forest  
**Seed Source:** Rice Lake, Forest County, WI  
**Summary:** 55 pounds of rice purchased by GLIFWC and cost shared by the Nicolet National Forest and GLIFWC was seeded by the Nicolet in the first seeding attempt on this water.
- 41) **Name:** Crooked Lake  
**Location:** Southeastern Gogebic County, Michigan  
**Cooperators:** Lac Vieux Desert Band of Chippewa Indians, Ottawa National Forest  
**Seed Source:** Uncertain; a combination of sources including Rice Lake, Forest County, WI Clam Lake, Burnett County, WI, and other unknown Burnett County area sources.  
**Summary:** Approximately 700 pounds of seed purchased by GLIFWC with funds from the Lac Vieux Desert Band and the U.S. Fish and Wildlife Service was seeded in Crooked Lake by the Band. This was the fourth year of seeding in an effort to reestablish the historic bed on this lake. Excellent results were observed from the previous three years of seeding, with approximately 10 acres of rice established.
- 42) **Name:** Sucker Lake  
**Location:** Eastern Gogebic County, Michigan  
**Cooperator:** Ottawa National Forest  
**Seed Source:** Not recorded; some combination of 7 different northwest Wisconsin area waters

**Summary:** 660 pounds of rice purchased by GLIFWC with funds provided by the Ottawa National Forest and COF was seeded by the Ottawa in the second seeding attempt on this water. Several nice beds were reported produced by the 1995 seeding.

- 43) **Name:** Stone Lake  
**Location:** Southeastern Gogebic County, Michigan  
**Cooperator:** Ottawa National Forest  
**Seed Source:** Not recorded; some combination of 7 different northwest Wisconsin area waters  
**Summary:** Approximately 207 pounds of rice purchased by GLIFWC with funds provided by the Ottawa National Forest and COF was seeded by the Ottawa in the initial seeding attempt on this water.
- 44) **Name:** Perch Lake  
**Location:** Eastern Gogebic County, Michigan  
**Cooperator:** Ottawa National Forest  
**Seed Source:** Not recorded; some combination of 7 different northwest Wisconsin area waters  
**Summary:** Approximately 207 pounds of rice purchased by GLIFWC with funds provided by the Ottawa National Forest and COF was seeded by the Ottawa in the initial seeding of this water.
- 45) **Name:** Lac Vieux Desert  
**Location:** Southeastern Gogebic County, Michigan  
**Cooperators:** Lac Vieux Desert Band of Chippewa Indians, U.S. Fish & Wildlife Service  
**Seed Source:** Uncertain; a combination of sources including Rice Lake, Forest County, WI Clam Lake, Burnett County, WI, and other unknown Burnett County sources.  
**Summary:** Approximately 903 pounds of seed purchased by GLIFWC with funds from the LVD Band and the U.S. Fish and Wildlife Service was seeded in Lac Vieux Desert by the LVD Band. This was an expansion of a successful seeding effort conducted the past 5 years aimed at reestablishing the historic beds on this lake. The long term success of this bed will be dependant upon future water level regulation.
- 46) **Name:** Ontonogan River  
**Location:** Southeastern Gogebic County, Michigan  
**Cooperator:** Lac Vieux Desert Band of Chippewa Indians  
**Seed Source:** Uncertain; a combination of sources including Rice Lake, Forest County, WI Clam Lake, Burnett County, WI, and other unknown Burnett County sources.  
**Summary:** Approximately 250 pounds of seed purchased by GLIFWC with funds from the LVD Band and the U.S. Fish and Wildlife Service was seeded in an initial seeding attempt by the LVD Band.

- 47) **Name:** The Mud Lakes  
**Location:** Northwest Baraga County, Michigan  
**Cooperator:** Keweenaw Bay Indian Community  
**Seed Source:** Clam Lake, Burnett County, WI  
  
**Summary:** 310 pounds of seed purchased by GLIFWC and paid for by the KB Community was seeded by KB in the third seeding of these small, on-reservation lakes.
- 48) **Name:** Sand Point Slough  
**Location:** Northwest Baraga County, Michigan  
**Cooperator:** Keweenaw Bay Indian Community  
**Seed Source:** Kakagon Sloughs, Ashland County, WI  
**Summary:** 597 pounds of seed purchased by GLIFWC and paid for by the KB Community was seeded by KB in the fifth seeding of this on-resevation slough associated with Lake Superior. Rice has shown good response here, but reportedly has been heavily impacted by muskrats.
- 49) **Name:** The Pinery Lakes  
**Location:** Northcentral Baraga County, Michigan  
**Cooperator:** Keweenaw Bay Indian Community  
**Seed Source:** Clam Lake, Burnett County, WI  
**Summary:** 477 pounds of seed purchased by GLIFWC and paid for by the KB Community was seeded by KB in the sixth seeding of these small, twin, on-reservation lakes. Seeding was concentrated in those areas that showed some establishment from the previous years' seeding.
- 50) **Name:** Bishop Lake  
**Location:** Northcentral Baraga County, Michigan  
**Cooperator:** Keweenaw Bay Indian Community  
**Seed Source:** Clam Lake, Burnett County, WI  
**Summary:** 61 pounds of seed purchased by GLIFWC and paid for by the KB Community was seeded by KB in the initial seeding of this small, on-reservation lake.
- 51) **Name:** Spectacle Lake  
**Location:** Central Chippewa County, Michigan  
**Cooperator:** Bay Mills Community of Chippewa Indians  
**Seed Source:** Spur Lake, Oneida County, WI  
**Summary:** 276 pounds of seed purchased by GLIFWC with Bay Mills' COF funds was seeded by the Bay Mills Community in the fourth seeding of this water. Seedings from prior years have produced several acres of rice.
- 52) **Name:** Waishkey (Back Bay), Lake Superior

**Location:** Central Chippewa County, Michigan

**Cooperator:** Bay Mills Community of Chippewa Indians

**Seed Source:** Kakagon Sloughs, Ashland County, WI (251 pounds) and Rice Lake, Forest County, WI (213 pounds)

**Summary:** 464 pounds of seed purchased by GLIFWC with Bay Mills' funds was seeded by the Bay Mills Community in the second seeding of this water.

53) **Name:** Houghton Lake

**Location:** West-central Roscommon County, Michigan

**Cooperator:** MiDNR

**Seed Source:** Rice Lake, Forest County, WI (113 pounds), Spur Lake, Oneida County, WI (192 pounds)

**Summary:** 305 pounds of seed purchased by GLIFWC with COF funds was seeded by the MiDNR in the initial seeding effort to reestablish the historic rice beds on this water.

## RESEARCH

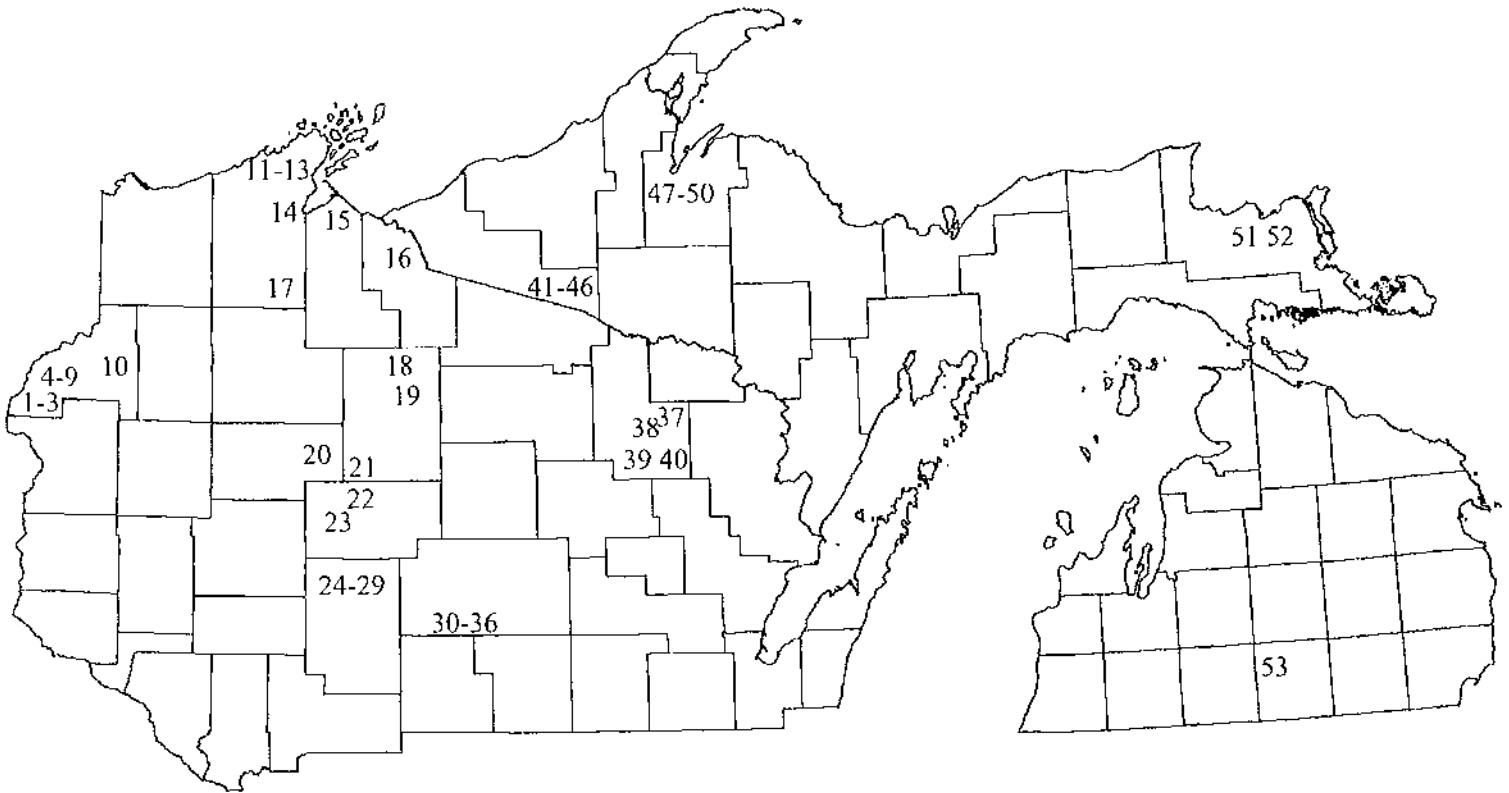
### Wild Rice Genetics Investigations

Environmental threats that place both existing populations and restoration activities at risk have created a need for a better understanding of rice's phenotypic and genotypic variation, and how that variation may be related to local adaptation. Wild rice is known to show fairly high levels of phenotypic variation across its range, but little is known about patterns in this variation, especially in Wisconsin. In addition, the relationship between phenotypic variation and genetic variation is largely unknown. Although wild rice is wind pollinated, the pollen is relatively heavy, and the seed is not believed to generally disperse great distances. Thus it is believed that individual stands may in time develop into unique strains, adapted to local conditions.

In 1996 the first phase of a cooperative study with the UW-Madison Botany Department examining genetic variation in wild rice was concluded with the completion of the report "Genetic Variability in Wild Rice populations in northern Wisconsin" (Lu and Waller, 1996). This study compared populations by comparing variables such as the mean number of polymorphic loci, gene diversity, and percent polymorphic loci. Among other results, they found the genetic differentiation among the 17 populations to be nearly 3 times higher than within-population inbreeding, and that a measure of genetic distance was only weakly related to geographic distance. They also found relatively less genetic variability in southern and eastern populations than in northern and western populations. This first look at genetic variability may eventually lead to consideration of genetic diversity in the management of this important resource. Additional genetics research will be conducted as funding allows.

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| 1-3) Fish Lake, Dueholm Flowage, and North Dike Flowage, Fish Lake Wildlife Area       | 23) Chequamegon Waters Flowage   |
| 4-8) Phantom, North Fork, Lower Hay Creek, Dike 2 & Refuge Ext. Flows. Crex Meadows WA | 24-29) Clark County Flowages   |
| 9) Black Brook Flowage, Amsterdam Sloughs WA   | 30-36) North Townline, Teal, Smokey Hill, North Honey Island, North Rice Lake, Small 15 and Small 16 Flowages, Mead WA |
| 10) Yellow River   | 37) Revolver Lake  |
| 11-13) Raspberry River, Bradum Marsh & Eagle Bay Beaver Ponds                          | 38) Wabikon Lake   |
| 14) Chequamegon Bay  | 39) Rat River  |
| 15) Kakagon Sloughs  | 40) Knowles Creek Impoundment  |
| 16) Gile Flowage   | 41-46) Crooked Lake, Sucker Lake, Stone Lake, Perch Lake, Lac Vieux Desert & Ontonogan River                           |
| 17) Chippewa Lake  | 47-50) The Mud Lakes, Sand Point Slough, The Pinery Lakes & Bishop Lake  |
| 18) Hay Lake   | 51) Spectacle Lake   |
| 19) Wilson Flowage   | 52) Waishkey (Back) Bay  |
| 20) Lake McGee   | 53) Houghton Lake  |
| 21-22) Upper and Lower Steve Creek Flowages  |  |

Figure 2. Waters seeded in 1996 GLIFWC cooperative ventures.