

## **MANOOMIN (WILD RICE) ENHANCEMENT AND RESEARCH IN THE CEDED TERRITORIES - 2003**

### **INTRODUCTION**

The Great Lakes Indian Fish and Wildlife Commission (GLIFWC) conducts a manoomin (*Zizania palustris*) enhancement and research program in the territories ceded in the Treaties of 1836, 1837, and 1842. Most wild rice management projects are conducted cooperatively with other natural resource agencies. This report summarizes activities carried out under this program in 2003.

### **BACKGROUND**

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 Ojibwe, and is considered sacred food. The September moon is still referred to as Manoominike Giizis (the Rice Making Moon), 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 cooperatively 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 Department of Natural Resources (WDNR) 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 WDNR for seeding on a state wildlife area. The seeding program grew gradually over the next several years, until it expanded significantly in 1991 (Figure 1) with support of funding from the Bureau of Indian Affairs Circle of Flight (COF) Program. Restoration efforts continue to be an important part of GLIFWC's manoomin management program. The cooperative seeding of over 8,600 pounds of rice in 2003 is summarized below.

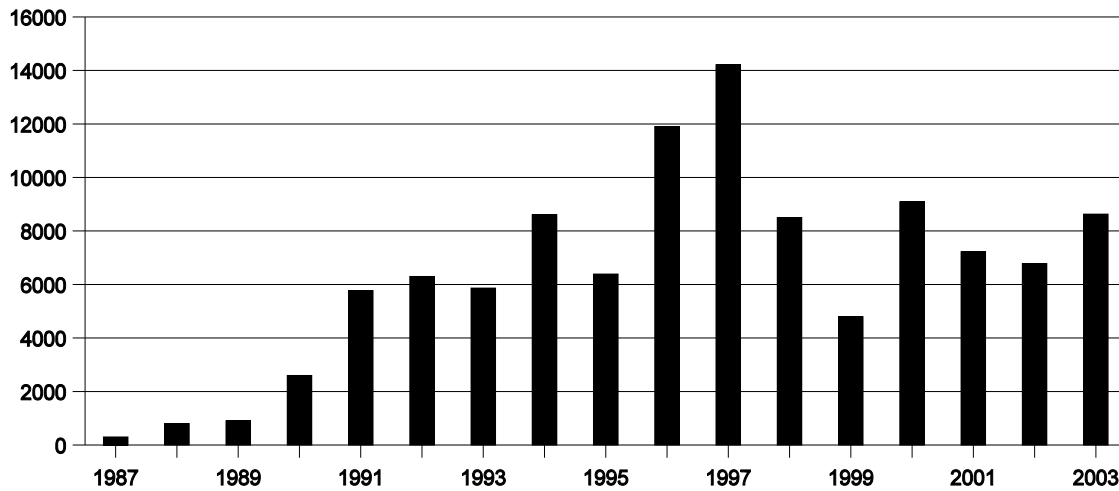


Figure 1. Pounds of manoomin purchased by GLIFWC and seeded by GLIFWC, its member tribes, or cooperators, 1987-2003.

## ENHANCEMENT

### Seeding Summary

In 2003, 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 8,630 pounds of wild rice was seeded in 31 waters in 14 Wisconsin and 1 Michigan counties.

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. Tribal interest in this resource has acted as a catalyst, stimulating effective partnerships with other agencies sharing a concern for this resource. Cooperators in 2003 included GLIFWC member tribes, including the Lac Vieux Desert Band, the Lac du Flambeau Band and the Red Cliff Band; federal agencies including the Ottawa and Chequamegon-Nicolet National Forests and USFWS; state agencies including the Wisconsin Department of Natural Resources (WDNR) and the Michigan Department of Natural Resources (MiDNR); 1 Wisconsin county (Douglas); and the Wisconsin Valley Improvement Company. The contributions of each of these cooperators are summarized by project below.

## Seed Purchasing

Seed purchasing in 2003 was quite successful given the relatively modest crop available for harvesters. Overall rice abundance in Wisconsin was similar to the fairly poor crop observed in 2002; an index to manoomin abundance index for 2003, based on surveys of 40 Wisconsin waters, was 28% below the 1985-2003 average (David 2008). Nevertheless, GLIFWC or its cooperators were able to purchase 8,630 pounds of seed for planting (Figure 1). Seed purchased was harvested from at least 24 different waters. For seed with a known origin, the largest amount came from Spur Lake (Oneida County WI, 1,792 pounds), followed by Rice Lake (Crow Wing County MN, near Deerwood, 736 pounds), Aurora Lake (Vilas County WI, 559 pounds) and Upper Ninemile Flowage (Vilas County, WI, 559 pounds). No other water is known to have supplied more than 500 pounds of seed.

## Seeding Locations

Thirty Wisconsin and one Michigan water received 8,630 pounds of seed under cooperative seeding ventures in 2003. Figure 2 displays the locations of seeded waters. All sites were seeded in the fall. Sites seeded were:

- 1-2) **Name:** Cylon Wildlife Area: 2 unnamed wetlands  
**Location:** North-central St. Croix County, WI, T31N, R16W, Sections 10 and 11.  
**Cooperator:** WDNR  
**Seed Source:** Rice Lake, Crow Wing County MN, near Deerwood,, or Rice Lake, Crow Wing County MN, 2 miles SSE of Nisswa (distribution not recorded by seeder) (98 pounds).  
**Summary:** 98 pounds of seed purchased by GLIFWC with COF and WDNR funds was seeded by the WDNR on 2 small, unnamed flowages on the Cylon Wildlife area:  
1) SE 1/4, SW1/4, S1/2, Sec.10, T31N, R16W; approximately 49 pounds  
2) SW 1/4, S1/2, Sec.11, T31N, R16W; approximately 49 pounds  
This was the initial seeding attempt on these two locations.
- 3) **Name:** Parker Creek, Parker Creek Wildlife Area  
**Location:** South-central Polk County, WI (T32N, R17W, Section 13)  
**Cooperator:** WDNR  
**Seed Source:** Rice Lake, Crow Wing County MN, near Deerwood (68 pounds).  
**Summary:** 68 pounds of rice purchased by GLIFWC with COF and WDNR funds was seeded by the WDNR on this State Fishery Area in an initial seeding attempt.
- 4) **Name:** Olson Meadows Flowage  
**Location:** East-central Douglas County, WI  
**Cooperator:** WDNR, Douglas County  
**Seed Source:** Spur Lake, Oneida County WI (98 pounds).

- Summary:** 98 pounds of rice purchased by GLIFWC with COF and WDNR funds was seeded by the WDNR this small flowage owned by Douglas County in an initial seeding attempt.
- 5) **Name:** Unnamed Pond (HWY 13, Cloverland Community Center), Brule River SF  
**Location:** Northeast Douglas County, WI, NE Sec. 35, T49N, R10W  
**Cooperator:** WDNR  
**Seed Source:** Spur Lake, Oneida County WI (68 pounds) and Rodgers Lake, Todd County MN (54 pounds).  
**Summary:** 122 pounds of rice purchased by GLIFWC with COF and WDNR funds was seeded by the WDNR in an initial seeding attempt on this pond on the east side of HWY 13.
- 6) **Name:** Barrier Ponds, Brule River State Forest  
**Location:** Northeast Douglas County, WI, SW Sec.26 T49N, R10W  
**Cooperator:** WDNR  
**Seed Source:** Aurora Lake, Vilas County WI (63 pounds) and Spur Lake, Oneida County, WI (42 pounds).  
**Summary:** 105 pounds of rice purchased by GLIFWC with COF and WDNR funds was seeded by the WDNR on this string of small ponds along an unnamed stream west of Trask Creek in an initial seeding attempt.
- 7-12) **Name:** Red Cliff On-reservation Sites: Eagle Point Beaver Ponds, Blueberry Road Beaver Ponds, Emil Road Beaver Pond, Red Cliff Creek/Schooner Bay; Bradum Marsh and Broodstock Wetland  
**Location:** Northeast Burnett County, WI  
**Cooperator:** Red Cliff Band  
**Seed Source:** Rodgers Lake, Todd County, MN (104 pounds); Long/Wills Lake, Todd County, MN (60 pounds); Big Sandy Lake, Aitken County, MN (58 pounds), Rice Lake, Crow Wing County, MN, 2 miles SE of Nisswa, (56 pounds).  
**Summary:** 278 pounds of rice purchased by GLIFWC on behalf of the Red Cliff Band was seeded by the tribe as follows: Eagle Point Beaver Ponds, 35 pounds; Blueberry Road Beaver Ponds, 17 pounds; Emil Road Beaver Pond, 52 pounds; Red Cliff Creek/Schooner Bay, 159 pounds; Bradum Marsh and Broodstock Wetland, 15 pounds. The Tribe reports that Schooner Bay has been seeded numerous time previous, but grazing pressure has been high; the Eagle Point Beaver Ponds had been seeded previously, but not within the past 5 years; the Hatchery/Broodstock wetland seeding expands a bed that has been seeded previously; and that the Emil Road and Blueberry Road ponds were initial seedings.
- 13) **Name:** Wittlesey Creek National Wildlife Area Wetlands

**Location:** East-central Bayfield County

**Cooperator:** USFWS

**Seed Source:** Big Sandy Lake, Aitkin County, MN (38 pounds).

**Summary:** 38 pounds of rice purchased by GLIFWC with COF funds was seeded by USFWS staff on small ponds on the Wittlesey Creek National Wildlife Refuge. Although these small ponds may not be able to support a self sustaining rice bed, they are located along a visitor walking trail, and offer an important education opportunity.

14) **Name:** Totagatic Flowage

**Location:** Northwest Sawyer County, WI

**Cooperator:** WDNR

**Seed Source:** St. Croix River, Douglas County, WI (71 pounds), Spur Lake, Oneida County WI (56 pounds) and Radigan Flowage, Douglas County, WI (50 pounds).

**Summary:** 177 pounds of rice purchased by GLIFWC with COF and WDNR funds was planted on this flowage by GLIFWC in an initial seeding attempt. (This site should not be confused with Totagatic Lake in Bayfield County, which has long been an important rice water.)

15) **Name:** Wilson Lake

**Location:** Northeast Sawyer County, WI

**Cooperator:** Chequamegon National Forest (127 pounds).

**Seed Source:** Aurora Lake, Vilas County, WI (89 pounds) and the Clam River Flowage, Burnett County WI (38 pounds).

**Summary:** A total of 127 pounds of rice purchased by GLIFWC with COF funds was planted by GLIFWC on the initial seeding of this undeveloped lake located on the Chequamegon National Forest.

16) **Name:** Hay Lake

**Location:** Northcentral Price County, WI

**Cooperator:** Chequamegon National Forest

**Seed Source:** North Fork Flowage Burnett County, WI (57 pounds) and Phantom Flowage, Burnett County, WI (52 pounds)

**Summary:** 109 pounds of rice purchased by GLIFWC with COF and USFS funds was seeded by the Forest Service on this undeveloped lake. This site was also seeded in 1999 and 2000, but take thus far has been limited.

17) **Name:** Wilson Flowage

**Location:** Northeast Price County, WI

**Cooperator:** Chequamegon National Forest

**Seed Source:** Big Sandy Lake, Aitken County, MN (125 pounds); Rice Lake, Crow Wing County, MN, 2 miles SSE of Nisswa (91 pounds); Spur Lake, Oneida County, WI (68 pounds); Onamia Lake, Mille Lacs County, MN (62 pounds); Long/Wills Lake, Todd

County, MN, near Rogers Lake, (55 pounds).

**Summary:** 401 pounds of rice purchased by GLIFWC with COF and USFS funding was seeded by the Forest Service. This is an effort to expand a bed which has become established through regular seedings since 1995 on both Wilson and Upper Wilson Flowages (often times collectively referred to as the Wilson Flowage).

**18) Name:** Lac du Flambeau Reservation On-reservation Water: Sugarbush Flowage

**Location:** Southeast Iron County, WI

**Cooperator:** Lac du Flambeau Band

**Seed Source:** Aurora Lake, Vilas County, WI (109 pounds); Wild Rice Lake, Vilas County, WI (94 pounds); Trout River, Vilas County, WI (87 pounds); Mallard Lake, Aitkin County MN (77 pounds) and Mississippi River, Crow Wing County, MN (65 pounds).

**Summary:** 432 pounds of rice purchased by GLIFWC on behalf of the Lac du Flambeau Band was seeded by the band in the second annual seeding of this on-reservation water.

**19) Name:** Lac du Flambeau Reservation On-reservation Water: Middle Sugarbush Lake

**Location:** Southwest Vilas County, WI

**Cooperator:** Lac du Flambeau Band

**Seed Source:** Mallard Lake, Aitkin County MN (144 pounds) and Mississippi River, Crow Wing County, MN (245 pounds).

**Summary:** 389 pounds of rice purchased by GLIFWC on behalf of the Lac du Flambeau Band was seeded by the band in at least the second seeding of this on-reservation water. Area seeded was in the narrows west of the outlet to Lower Sugarbush Lake.

**20-22) Name:** Pershing Wildlife Area Sites: Holtzer Flowage, Waterfowl (Redman) Flowage, Flowage 1

**Location:** West-central Taylor County, WI

**Cooperator:** WDNR

**Seed Source:** Mondeaux Flowage or Chequamegon Waters Flowage, Taylor County, WI (source not recorded by seller).

**Summary:** Seed purchased by GLIFWC with COF and WDNR funds was seeded on the following 3 Pershing Wildlife Area Flowages as follows: Holtzers Flowage, 57 pounds; Waterfowl (Redman) Flowage, 175 pounds; Flowage1, 64 pounds. Waterfowl flowage had previously been seeded in 1991 and 1994; it was the initial seeding on the other two flowages.

**23) Name:** Roe Lake

**Location:** South-central Oneida County, WI

**Cooperator:** WDNR

**Seed Source:** Rice Lake, Crow Wing County, MN (2 miles SSE of Nisswa)(103 pounds); Rice Lake, Crow Wing County, MN (near Deerwood) (69 pounds) and Laona Millpond,

Forest County, WI (63 pounds).

**Summary:** GLIFWC seeded 235 pounds of seed purchased with COF funds into this small, largely state-owned lake in an initial seeding effort.

- 24) **Name:** Jersey Flowage  
**Location:** North-central Lincoln County  
**Cooperator:** WDNR  
**Seed Source:** Spur Lake, Oneida County, WI (192 pounds); Rice Lake, Crow Wing County MN (near Deerwood) (68 pounds); Rice Lake, Crow Wing County MN (2 miles SSE of Nisswa) (60 pounds); North Fork Flowage, Burnett County, WI (54 pounds); Little Rice Lake, Forest County, WI (48 pounds) and Phantom Flowage, Burnett County, WI, (44 pounds).  
**Summary:** 466 pounds of seed purchased by GLIFWC with COF and WDNR funds was seeded by the WDNR in the second seeding attempt on this flowage.
- 25) **Name:** Gleason Flowage, Ackley Wildlife Area  
**Location:** Southwest Langlade County, WI  
**Cooperator:** WDNR  
**Seed Source:** Un-recorded northeast Wisconsin source (150 pounds).  
**Summary:** Approximately 150 pounds of seed purchased by the WDNR with WDNR, County, and GLIFWC funds was seeded on this flowage by the WDNR, who reported 3-5 acres of rice being present from the 2001 and 2002 seeding attempts.
- 26) **Name:** Middle Eau Claire Flowage  
**Location:** Southwest Langlade County, WI  
**Cooperator:** WDNR  
**Seed Source:** Un-recorded northeast Wisconsin source (100 pounds).  
**Summary:** Approximately 100 pounds of seed purchased by the WDNR with WDNR, County, and GLIFWC funds was seeded on this flowage by the WDNR, who reported 2-3 acres of rice being present from the initial seeding attempt last year (conducted without GLIFWC participation).
- 27) **Name:** Tower Flowage, Ackley Wildlife Area  
**Location:** Southwest Langlade County, WI  
**Cooperator:** WDNR  
**Seed Source:** Un-recorded northeast Wisconsin source (150 pounds).  
**Summary:** Approximately 150 pounds of seed purchased by the WDNR with WDNR, County, and GLIFWC funds was seeded on this flowage, in the third seeding attempt. The WDNR reports 8-10 acres of rice being present from the two previous seedings.
- 28) **Name:** Upper Eau Claire Flowage  
**Location:** Southwest Langlade County, WI

**Cooperator:** WDNR

**Seed Source:** Unrecorded northeast Wisconsin source (300 pounds).

**Summary:** Approximately 300 pounds of seed purchased by the WDNR with WDNR, County, and GLIFWC funds was seeded on this flowage by the WDNR, who reported 10 acres of rice being present from the initial seeding last year.

**29) Name:** Upper Trappe Flowage, Ackley Wildlife Area

**Location:** Southwest Langlade County, WI

**Cooperator:** WDNR

**Seed Source:** Un-recorded northeast Wisconsin source (300 pounds).

**Summary:** Approximately 300 pounds of seed purchased by the WDNR with WDNR, County, and GLIFWC funds was seeded on this flowage by the WDNR, who reported only a trace of rice being present from the initial seeding conducted last year.

**30) Name:** Grubhoe Lake

**Location:** Central Florence County, WI

**Cooperator:** WDNR

**Seed Source:** Phantom Flowage, Burnett County, WI (65 pounds); North Fork Flowage, Burnett County, WI (63 pounds); Aurora Lake, Vilas County, WI (62 pounds); Onamia Lake, Mille County, MN (50 pounds); Spur Lake, Oneida County, WI (43 pounds) .

**Summary:** 283 pounds of seed purchased by GLIFWC with COF funds was seeded by GLIFWC on this undeveloped lake. This site was also seeded in 2001.

**31) Name:** Lac Vieux Desert

**Location:** Gogebic County, MI

**Cooperators:** Ottawa National Forest, Lac Vieux Desert Band, Wisconsin Valley Improvement Company (WVIC)

**Seed Source:** For the major seeding effort underway at LVD, seed used came from 18 different sites as follows: Spur Lake, Oneida County WI (1,225 pounds); Upper Ninemile Flowage, Vilas County, WI (559 pounds); Rice Lake, Crow Wing County, MN (near Deerwood) (494 pounds); Aurora Lake, Vilas County, WI (261 pounds); Onamia Lake, Mille Lacs County, MN (229 pounds); Mallard Lake, Aitkin County, MN (188 pounds); Rodgers Lake, Todd County, MN (182 pounds); Big Sandy Lake, Aitkin County, MN (164 pounds); Little Rice Lake, Forest County, WI (99 pounds); Clark Lake, Crow Wing County, MN (90 pounds); Wabikon Lake, Forest County, WI (83 pounds); Rice Lake, Crow Wing County, MN (2 miles SSE of Nisswa) (78 pounds); Laona Millpond, Forest County, WI (58 pounds); Long/Wills Lake, Todd County, MN (57 pounds); Phantom Flowage, Burnett County, WI (46 pounds); Partridge Lake, Vilas County, WI (36 pounds); North Fork Flowage, Burnett County, WI (31 pounds) and Rice Lake, Forest County, WI (28 pounds).

**Summary:** GLIFWC and the Ottawa National Forest seeded 3,908 pounds of seed into Rice Bay on Lac Vieux Desert in the 2<sup>nd</sup> of 4 years of intensive seeding underway as part of the restoration effort on this lake being implemented after a modification of the FERC



license on this historic rice water. Rice paid for by WVIC and COF funds.

## **RESEARCH**

No research activities were conducted in 2003, but summary reports on research conducted cooperatively with the Forest Service in previous years were completed. These included a study which compared the sediment density at LVD with other area rice waters (David 2003a) and a study examining turbidity levels in Rice Bay on LVD, and the possible impacts of small motor boats on turbidity levels (David 2003b).

## **LITERATURE CITED**

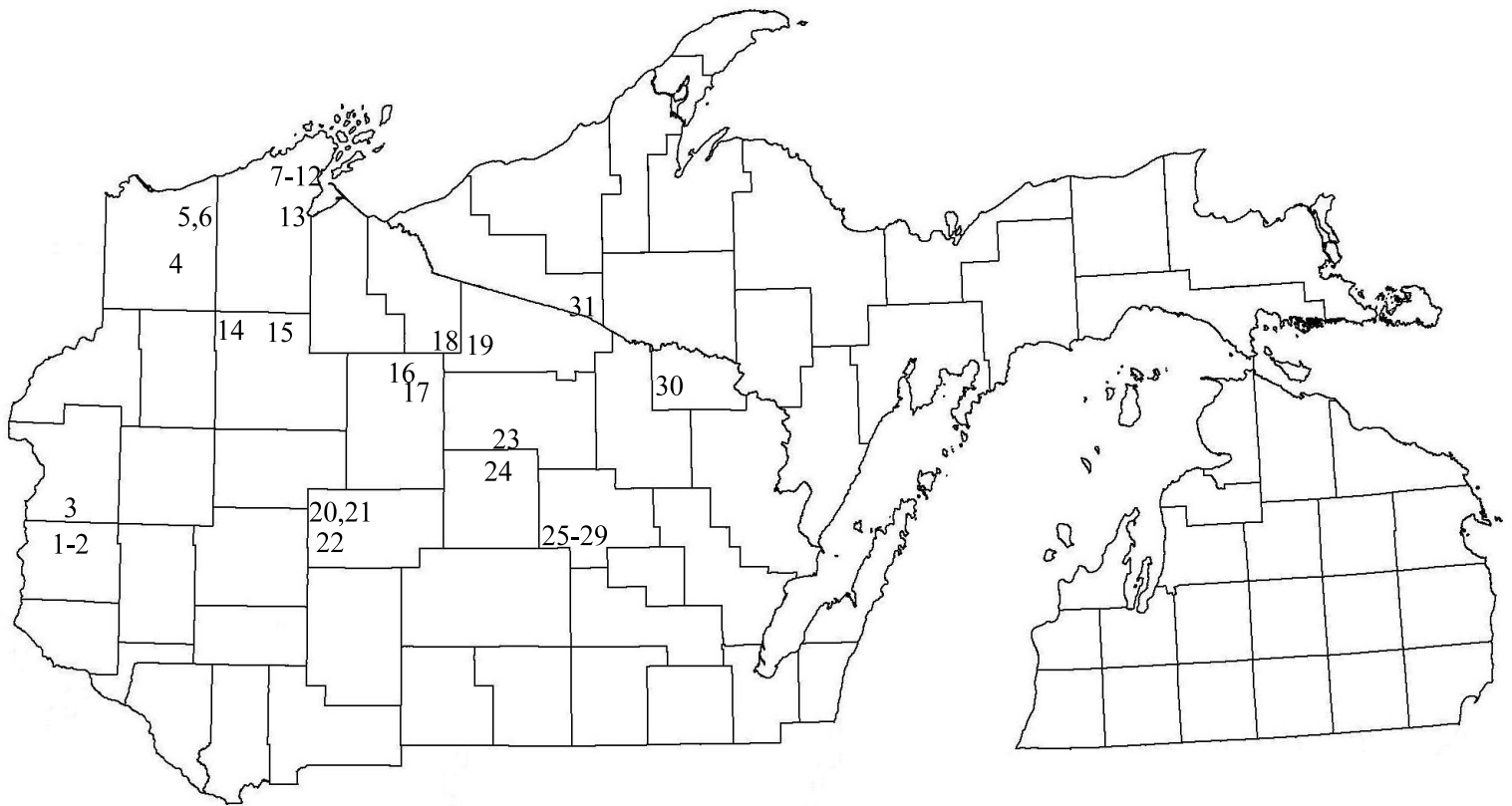
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1-2) Cylon Wildlife Area (2 sites)	16) Hay Lake
3) Parker Creek Wildlife Area	17) Wilson Flowage
4) Olson Meadows Flowage	18-19) Lac du Flambeau On-Reservation Sites: Sugarbush Flowage and Middle Sugarbush Lake
5) Unnamed Pond, Brule River State Forest	20-22) Pershing Wildlife Area Sites: Holtzer Flowage, Waterfowl (Redman) Flowage, Flowage 1.
6) Barrier Ponds, Brule River State Forest	23) Roe Lake
7-12) Red Cliff On-Reservation Sites: Eagle Point Beaver Ponds, Blueberry Road Beaver Ponds, Emil Road Beaver Pond, Red Cliff Creek/Schooner Bay; Bradum Marsh and Broodstock Wetland	24) Jersey Flowage
13) Northern Great Lakes Visitor Center Pond	25-29) Ackley Wildlife Area Flowages: Upper Trappe, Gleason, Tower, Upper Eau Claire, Middle Eau Claire
14) Totagatic Flowage	30) Grubhoe Lake
15) Wilson Lake	31) Lac Vieux Desert

Figure 2. Waters seeded in 2003 GLIFWC cooperative ventures.