

MANOOMIN (WILD RICE) ENHANCEMENT AND RESEARCH IN THE CEDED TERRITORIES - 2009

INTRODUCTION

The Great Lakes Indian Fish and Wildlife Commission (GLIFWC) conducts a wild rice (*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 2009.

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 reaffirmation 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 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 in 1991 (Figure 1) with support of funding from the Bureau of Indian Affairs Circle of Flight Program. Restoration efforts continue to be an important part of GLIFWC's manoomin management program.

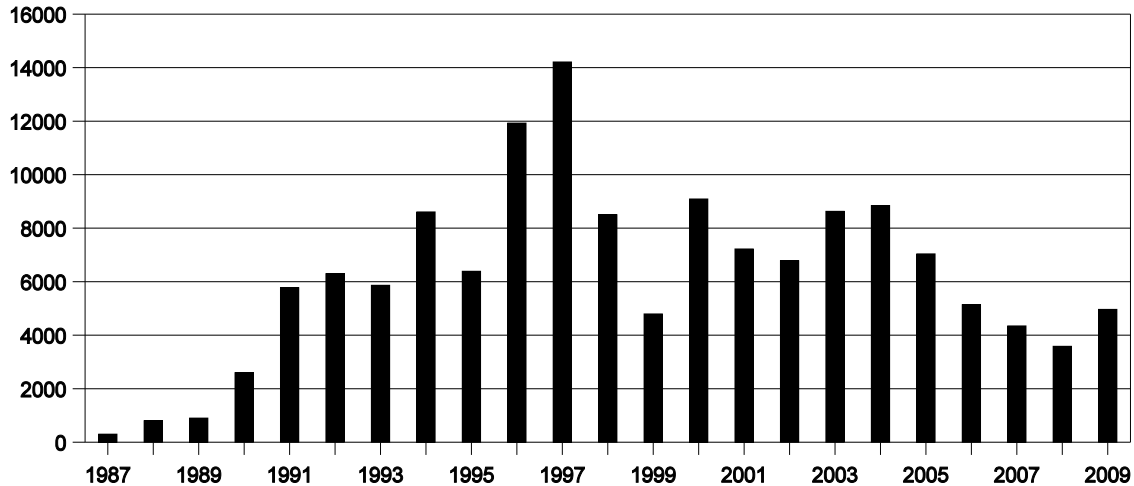


Figure 1. Pounds of wild rice purchased by GLIFWC and seeded by GLIFWC, its member tribes, or cooperators, 1987-2009.

ENHANCEMENT

Seeding Summary

In 2009, 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 4,964 pounds of wild rice was seeded in 29 waters in 12 Wisconsin and 2 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 2009 included three GLIFWC member tribes: the Keweenaw Bay Indian Community, the Bay Mills Indian Community, and the Lac du Flambeau Band; the Wisconsin Department of Natural Resources (WDNR); the Chequamegon - Nicolet National Forest; Douglas County; the Ho-Chunk Nation; and the St.Croix Flowage Association. The contributions of each of these cooperators are summarized by project below.

Seed purchasing in 2009 was facilitated by excellent weather during the harvest season, leading to an excellent harvest and many willing sellers. GLIFWC purchased nearly 5,000 pounds of seed (Figure 1). Seed purchased was harvested from 10 different waters, with the largest amounts coming from the Mississippi River (Crow Wing County, MN, 1,392 pounds), Little Rice Lake (Forest County, WI, 768 pounds), Lake Onamia (Mille Lacs County, MN, 556 pounds) and Clark Lake (Crow Wing County, MN, 537 pounds). All other waters supplied 400 pounds of seed or less.

Seeding Locations

Twenty-two Wisconsin and 7 Michigan waters received 4,964 pounds of seed under cooperative seeding ventures in 2009. Seeding was done at a rate of approximately 50 pounds per acre, so nearly 120 acres were seeded. Figure 2 displays the locations of seeded waters. All sites were seeded in the fall. Sites seeded were:

- 1) **Name:** Rice Flats on the St. Croix River (Wisconsin WBIC 2632500)
Location: St. Croix County, WI
Cooperator: WDNR
Seed Source: Mississippi River, Crow Wing County, MN (214 pounds); Wabikon Lake, Forest County, WI (48 pounds); Little Rice Lake, Forest County, WI (3,981 pounds).
Summary: 301 pounds of seed was planted by the WDNR in the second seeding attempt on this riverine site, with the initial seeding taking place in 2007. Although little take was observed from the initial seeding, additional effort is worthwhile on this historic site. Possible obstacles include poor water quality and/or rough fish impacts.
- 2) **Name:** Bashaw Brook (Wisconsin WBIC 2662500)
Location: Burnett County, WI
Cooperator: WDNR
Seed Source: Mississippi River, Crow Wing County, MN (101 pounds).
Summary: 101 pounds of seed was planted by the WDNR in the initial seeding attempt on this riverine site.
- 3) **Name:** Jackson Box (Moose Branch) Flowage (Wisconsin WBIC 2632500)
Location: Douglas County, WI
Cooperator: WDNR
Seed Source: Clark Lake, Crow Wing County, MN (154 pounds); Wabikon Lake, Forest County, WI (55 pounds); Mississippi River, Crow Wing County, MN (50 pounds); Little Rice Lake, Forest County, WI (45 pounds).
Summary: 304 pounds of seed was planted by GLIFWC in cooperation with Douglas County. This site had been seeded with some success several years ago, but the rice bed was set back by 2 years in a draw-down condition resulting from dike failure. The dike and water control structure were rebuilt in 2009, and the site seeded again.
- 4) **Name:** St. Croix (Gordon) Flowage (Wisconsin WBIC 2740300)
Location: Douglas County, WI
Cooperator: Gordon Flowage Association
Seed Source: Mississippi River, Crow Wing County, MN (205 pounds); Little Rice Lake, Forest County, WI (146 pounds); Dish Pan Lake, Itasca County, MN (51 pounds).
Summary: 402 pounds of seed was planted by GLIFWC in the third planting of several bays on the northwest and southwest side of the flowage. A bed of rice already exists on the east end of this very large flowage, where the St. Croix River enters, as well as a small bed east of the boat landing on the north side. However, this large body of water reportedly once supported much more rice, which the local flowage association is interested in re-establishing. The best take from current seeding efforts was on the large bay on the SW side of the flowage, but goose browsing has thus far been heavy.

- 5) **Name:** Wiggins Flowage, Augusta Wildlife Area (Wisconsin WBIC not available)
Location: Eau Claire County, WI
Cooperator: WDNR
Seed Source: Pound details not recorded, but source a mix of Mississippi River, Crow Wing County, MN; Little Rice Lake, Forest County, WI; and Wabikon Lake, Forest County, WI.
Summary: The WDNR seeded 153 pounds of rice into this flowage in the third consecutive seeding attempt. Heavy herbivory has been a problem thus far.
- 6) **Name:** Wood Duck Pool, Augusta Wildlife Area (Wisconsin WBIC not available)
Location: Eau Claire County, WI
Cooperators: WDNR
Seed Source: Pound details not recorded, but source a mix of Mississippi River, Crow Wing County, MN; Little Rice Lake, Forest County, WI; and Wabikon Lake, Forest County, WI.
Summary: The WDNR seeded 153 pounds of rice into this flowage in the third consecutive seeding attempt. Heavy herbivory has been a problem thus far.
- 7) **Name:** Funmaker Flowage, Black River State Forest (Wisconsin WBIC 1714700)
Location: Jackson County, WI
Cooperator: WDNR
Seed Source: Little Rice Lake, Forest County, WI (54 pounds).
Summary: The WDNR seeded 54 pounds of rice into this flowage in an initial seeding attempt.
- 8) **Name:** Koranda Flowage, Black River State Forest (Wisconsin WBIC not available)
Location: Jackson County, WI
Cooperator: WDNR
Seed Source: Mississippi River, Crow Wing County, MN (48 pounds).
Summary: The WDNR seeded 48 pounds of rice into this wildlife area in an initial seeding attempt.
- 9) **Name:** 17 West Flowage (Wisconsin WBIC 1718500)
Location: Jackson County, WI
Cooperators: WDNR
Seed Source: Wabikon Lake, Forest County, WI (59 pounds).
Summary: The WDNR seeded 59 pounds of rice into this flowage in an initial seeding attempt.
- 10) **Name:** Black Duck Flowage, Black River State Forest (Wisconsin WBIC1719000)
Location: Jackson County, WI
Cooperator: WDNR
Seed Source: Mississippi River, Crow Wing County, MN (60 pounds).
Summary: This site was seeded by the WDNR with 60 pounds of rice in an initial seeding attempt at this location.

- 11) Name:** Ho-Chunk Nation Kickapoo Property, T13N, R2W, S4 (WI WBIC not available)
Location: Vernon County, WI
Cooperator: WDNR Ho-Chunk Nation
Seed Source: Rice Lake, Forest County, WI (37 pounds).
Summary: This site was seeded by the WDNR/Ho-Chunk Nation with 37 pounds of rice in an initial seeding attempt at this location.
- 12) Name:** Ho-Chunk White Otter Property T14N, R5E, S2 (WI WBIC not available)
Location: Juneau County, WI
Cooperator: WDNR, Ho-Chunk Nation
Seed Source: Rice Lake, Forest County, WI (36 pounds).
Summary: This site was seeded by the WDNR/Ho-Chunk Nation with 36 pounds of rice in an initial seeding attempt at this location.
- 13) Name:** Upper Steve Creek Flowage (Wisconsin WBIC 2191700)
Location: Taylor County, WI
Cooperator: Chequamegon-Nicolet National Forest (CNNF)
Seed Source: Flowage Lake, Aitkin County, MN (143 pounds).
Summary: This site was seeded by CNNF staff. Although this site has been seeded previously without success, a new effort is being made in conjunction with a lowering of flowage water levels. Seeding has been very successful on the Lower Steve Creek Flowage just a few miles downstream in the same watershed.
- 14) Name:** Upper Squaw Creek Flowage (Wisconsin WBIC 2243200)
Location: Price County, WI
Cooperator: Chequamegon-Nicolet National Forest (CNNF)
Seed Source: Flowage Lake, Aitkin County, MN (157 pounds).
Summary: This site was seeded by CNNF staff. Although this site has been seeded previously without success, a new effort is being made in conjunction with a lowering of flowage water levels. One potential obstacle to success could be heavy herbivory by nesting geese.
- 15) Name:** Deer Lake (Wisconsin WBIC 1844100)
Location: Iron County, WI
Cooperator: None
Seed Source: Clark Lake, Crow Wing County, MN (383 pounds).
Summary: This site was seeded by GLIFWC staff in an initial seeding effort at this small, undeveloped lake.
- 16) Name:** Sugarbush Flowage (Wisconsin WBIC 237200 for Sugarbush Creek)
Location: Iron County, WI
Cooperators: Lac du Flambeau Band
Seed Source: Big Lake Thoroughfare, Oneida County, WI (96 pounds).
Summary: The Lac du Flambeau Band planted 96 pounds of seed in this on-reservation flowage in an effort to restore previously established beds that had been lost following a dike failure. This was the second successive recent seeding effort.

- 17) **Name:** Chewelah Lake Pool (Wisconsin WBIC not available)
Location: Vilas County, WI
Cooperator: Lac du Flambeau Band
Seed Source: Big Lake Thoroughfare, Oneida County, WI (56 pounds).
Summary: The Lac du Flambeau Band planted 56 pounds of seed in this on-reservation impoundment in an initial seeding attempt. This pool is along the dike north of Chewelah Lake.
- 18) **Name:** Pokegama Lake (Wisconsin WBIC 2320800)
Location: Vilas County, WI
Cooperator: Lac du Flambeau Band
Seed Source: Big Lake Thoroughfare, Oneida County, WI (96 pounds).
Summary: The Lac du Flambeau Band planted 96 pounds of seed in a bay towards the north end of this on-reservation lake. Some rice has become established in a bay south of the bay seeded in this attempt as a result of seeding the two previous years.
- 19) **Name:** Unnamed Duck Pond (Wisconsin WBIC not available)
Location: Vilas County, WI
Cooperator: Lac du Flambeau Band
Seed Source: Big Lake Thoroughfare, Oneida County, WI (53 pounds).
Summary: The Lac du Flambeau Band planted 53 pounds of seed in an initial seeding effort on this small on-reservation pond which was created as part of a Circle of Flight project.
- 20) **Name:** Robago Lake (Wisconsin WBIC 674100)
Location: Florence County, WI
Cooperator: WDNR
Seed Source: Mississippi River, Crow Wing County, MN (205 pounds); Onamia Lake, Mille Lacs County, MN (90 pounds); Little Rice Lake, Forest County, WI (85 pounds); Long Lake, Burnett County, WI (66 pounds); Dish Pan Lake, Itasca County, MN (36 pounds).
Summary: The WDNR and GLIFWC seeded 482 pounds of rice in the third annual seeding attempt on this water. A couple of acres of sparse rice was observed in 2009 from the previous seeding efforts.
- 21) **Name:** Legerski's (Unnamed) Pond (Wisconsin WBIC 656500)
Location: Florence County, WI
Cooperator: WDNR
Seed Source: Little Rice Lake, Forest County, WI (90 pounds); Long Lake, Burnett County, WI (59 pounds).
Summary: The WDNR seeded 149 pounds of rice on this rice water which had previously been seeded in 2004 and 2008.
- 22) **Name:** Halls Creek Flowage (Wisconsin WBIC 652100)
Location: Florence County, WI
Cooperator: WDNR
Seed Source: Mississippi River, Crow Wing County, MN (112 pounds); Little Rice Lake,

Forest County, WI (76 pounds).

Summary: The WDNR seeded 188 pounds of rice on this site in 2009. Although an initial seeding in 2006 did not appear to be successful, this site is being tried again following a drawdown in 2007. Site was also seeded in 2008.

- 23) **Name:** Menge Creek
Location: Baraga County, MI
Cooperator: Keweenaw Bay Indian Community
Seed Source: Lake Onamia, Mille Lacs County, MN (276 pounds); Mississippi River, Crow Wing County, MN (51 pounds); Little Rice Lake, Forest County, WI (29 pounds).
Summary: This on-reservation site was seeded with 356 pounds of rice by the Keweenaw Bay Indian Community in at least the third annual seeding of this water.
- 24) **Name:** Roubillard Impoundment
Location: Baraga County, MI
Cooperator: Keweenaw Bay Indian Community
Seed Source: Lake Onamia, Mille Lacs County, MN (190 pounds).
Summary: **Summary:** This on-reservation site was seeded with 190 pounds of rice by the Keweenaw Bay Indian Community in what is believed to be the initial seeding on this water.
- 25) **Name:** Laughs (Lost) Lake
Location: Baraga County, MI
Cooperator: Keweenaw Bay Indian Community
Seed Source: Mississippi River, Crow Wing County, MN (128 pounds).
Summary: This on-reservation site was seeded with 128 pounds of rice by the Keweenaw Bay Indian Community in an at least the third annual seeding of this water.
- 26) **Name:** Pequaming Bay
Location: Baraga County, MI
Cooperator: Keweenaw Bay Indian Community
Seed Source: Mississippi River, Crow Wing County, MN (25 pounds).
Summary: This small on-reservation bay on Lake Superior was seeded by the Keweenaw Bay Indian Community in a small initial test seeding with 25 pounds of seed.
- 27) **Name:** Huron Bay
Location: Baraga County, MI
Cooperator: Keweenaw Bay Indian Community
Seed Source: Mississippi River, Crow Wing County, MN (101 pounds).
Summary: This bay on Lake Superior was seeded by the Keweenaw Bay Indian Community in an initial test seeding of 101 pounds of rice.
- 28) **Name:** Back Bay, Lake Superior
Location: Chippewa County, MI
Cooperator: Bay Mills Indian Community
Seed Source: Dish Pan Lake, Itasca County, MN (106 pounds); Little Rice Lake, Forest County, WI (50 pounds); Long Lake, Burnett County, WI (50 pounds); Flowage Lake,

Aitkin County, MN (45 pounds).

Summary: This on-reservation site was seeded by the Bay Mills Indian Community. This bed, which has been seeded for many years, continues to persist but has expanded only slowly on its own. This seeding of 251 pounds is intended to expand the bed, and add genetic diversity to the existing seed bank.

29) Name: Back Bay, Lake Superior

Location: Chippewa County, MI

Cooperator: Bay Mills Indian Community

Seed Source: Dish Pan Lake, Itasca County, MN (207 pounds); Long Lake, Burnett County, WI (149 pounds); Flowage Lake, Aitkin County, MN (46 pounds).

Summary: This on-reservation site was seeded by the Bay Mills Indian Community. This bed, which has been seeded for many years, continues to persist but has expanded only slowly on its own. This seeding of 402 pounds is intended to expand the bed, and add genetic diversity to the existing seed bank.

RESEARCH

The year 2009 marked the second field year of a two-year effort to inventory as many ceded territory rice beds as possible. For 2009, efforts were focused on the Wisconsin and Upper Peninsula of Michigan ceded territories. This work was largely funded by the WDNR and an Administration for Native Americans grant.

Field Surveys

Possible but undocumented rice waters identified in 2008 were field surveyed in an effort to confirm the presence or absence of manoomin. Field surveys were conducted in July and August, when the plants are typically in the emergent stage, and most easily visible and identified.

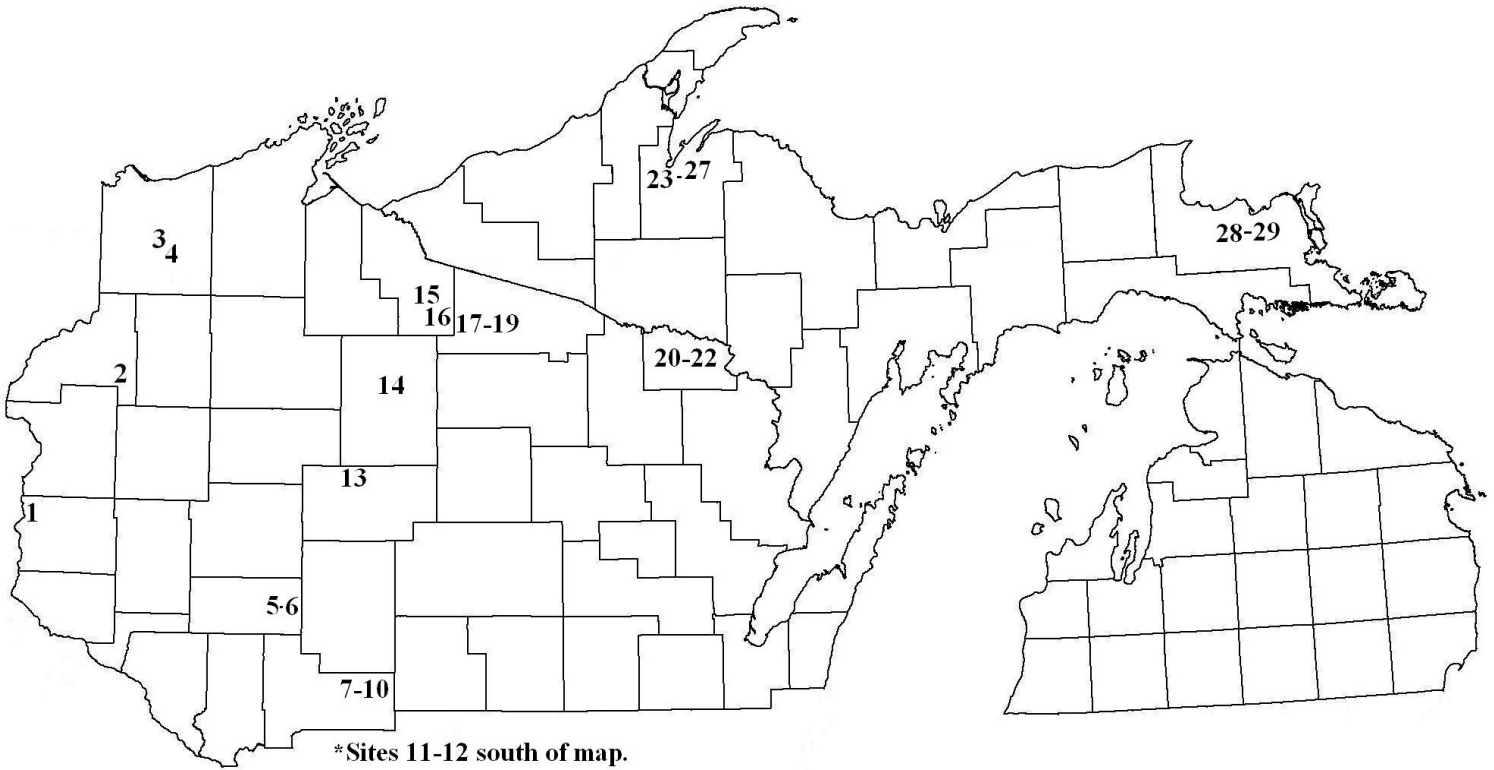
Between surveys conducted in 2008 and 2009, over 300 sites in the Wisconsin ceded territory were found to support rice. A summary of the Wisconsin inventory can be found in *Wisconsin Ceded Territory Manoomin Inventory Ver. 1.0*, (David, 2010). Rice was also found to exist on a small number of locations in Michigan's Upper Peninsula. Most of these are within 10 miles of the Wisconsin border, and many are the product of recent seeding efforts. A summary report on the distribution of manoomin in the Upper Peninsula will be completed as time permits.

LITERATURE CITED

David, P. 2010. Wisconsin Ceded Territory Manoomin Inventory Ver. 1.0. Great Lakes Indian Fish and Wildlife Commission Project Report 2010-01.

Johnson, E. 1970. Preliminary notes on the historic use of wild rice. *The Minnesota Archaeologist*, Vol XXX, Number 2.

Vennum, T. 1988. Wild rice and the Ojibwa people. Minnesota Historical Society Press. 357 pp.



1) Rice Flats on the St. Croix	14) Upper Squaw Creek Flowage
2) Bashaw Brook	15) Deer Lake
3) Jackson Box (Moose Branch) Flowage	16) Sugarbush Flowage
4) St. Croix (Gordon) Flowage	17-19) Chewelah Lake, Pokegama Lake and Unnamed "Duck Pond", LDF Reservation
5-6) Wiggins Flowage and Wood Duck Pool, Augusta Wildlife Area	20-22) Robago Lake, Legerski's (Unnamed) Pond and Halls Creek Flowage
7-10) Funmaker Flowage, Koranda Flowage, West Dike 17 Flowage, and Black Duck Flowage, Dike 17 Wildlife Area.	23-27) Menge Creek, Roubillard Impoundment, Laughs (Lost) Lake and Pequaming Bay, KB Reservation, and Huron Bay
11-12) Ho-Chunk Nation Kickapoo Property and Ho-Chunk Nation White Otter Property	28-29) Spectacle Lake and Back Bay, Bay Mills Reservation
13) Upper Steve Creek Flowage	

Figure 2. Waters seeded in 2009 GLIFWC cooperative ventures.