

**We Energies
2007 Annual Report - Nuisance Plant Control Survey
Kingsford Reservoir
FERC Project #2131**

We Energies' Environmental department staff, Mr. Mike Grisar and Mr. John Hrobar, conducted a survey from a boat of the entire shoreline at the Kingsford Reservoir on August 6, 2007. All waters and appropriate wetlands accessible from the boat were evaluated. Those species targeted for the survey included purple loosestrife (*Lythrum salicaria*) and Eurasian water milfoil (*Myriophyllum spicatum*). The visual meander survey included areas of shallow water adjacent to the shorelines. Shallow water was surveyed to a point where the water depth and clarity excluded visibility conducive to observing submerged vegetation.

No purple loosestrife plants were observed along the shores of the Kingsford Reservoir project area.

For each stand of Eurasian water milfoil encountered during the 2007 surveys, the stand location and perimeter were mapped using a Trimble Geo XH GPS unit. Where the stand size was negligible, a single point in the center of the stand was located with the GPS. Various data were collected at each stand including stand/mat density and mat thickness (when present). The stand size was subsequently calculated from the collected GPS boundaries. A percent cover scale from 1-5 (sparse – dense) was used to accurately and consistently estimate stand densities:

<u>Estimated Density Rating</u>	<u>% Cover</u>
1 (sparse)	0 - 5%
2 (moderately sparse)	>5 - 25%
3 (moderate)	>25 - 75%
4 (moderately dense)	>75 - 95%
5 (dense)	>95%

Forty-two stands of Eurasian water milfoil were observed at the Kingsford Reservoir project area (see attached map). The identified stands are distributed throughout the project area and range in size from <0.01-acre up to 34.40-acres.

Table 1. Eurasian Water Milfoil Stand Data.

Stand # *	Stand/Mat Density	Mat Thickness	Stand Size (acres)
1	1	None	0.50
2 (0)	1	None	0.01
3	1	None	4.10
4	1	None	1.00
5	1	None	34.40
6	3	None	7.90
7 (8)	1	None	0.01
8 (9A)	3	None	0.01
9 (9B)	1	None	0.01
10	1	None	3.60
11	3	None	0.40
12	1	None	0.90

Stand #	Stand/Mat Density	Mat Thickness	Stand Size (acres)
13	1	None	0.40
14	3	None	3.00
15	1	None	5.10
16	2	None	1.50
17	1	None	0.40
18	1	None	2.20
19	1	None	0.01
20	1	None	0.01
21	1	None	0.01
22	1	None	0.10
23	2	None	0.01
24	1	None	0.01
25	1	None	0.01
26	1	None	0.40
27	1	None	0.10
28	1	None	0.20
29	2	None	0.10
30	4	None	0.10
31	1	None	1.80
32	1	None	20.70
33	1	None	11.60
34	3	None	1.60
35	3	None	13.80
36	1	None	1.80
37	1	None	5.60
38	4	0-4	22.00
39	1	None	0.10
40	3	None	1.10
41	5	0-4	11.60
42	3	None	2.10

* - Note: the stand numbers on the map are reflected in parentheses.

Eurasian water milfoil is present in approximately 160-acres in the Kingsford Reservoir project area. Cumulatively, the average stand size is 3.82-acres and has an average density rating of 1.69 per stand.

Out of the 42 observed stands, only stands 38 and 41 have a high density (>75% cover). These stands are large stands occurring within Cowboy Lake and when combined they cover 23.60-acres. They account for more approximately 21% of the total area observed to have Eurasian water milfoil present.

The majority of the stands have very low densities of Eurasian water milfoil with single stems growing sporadically among a lot of native species. The most common native species included northern water milfoil (*Myriophyllum sibiricum*), two-leaf water milfoil (*Myriophyllum heterophyllum*), a variety of pondweeds (*Potamogetan* sp.), common waterweed (*Elodea canadensis*), bladderwort (*Utricularia* sp.), coon's tail (*Ceratophyllum demersum*), water celery (*Vallisneria americana*), yellow pond lilies (*Nuphar* sp.), and white pond lily (*Nymphaea*

odorata). 31 of the 42 stands have low densities (<25% cover) and account for 63% (100.60-acres) of the total area observed to have Eurasian water milfoil present.

Although Eurasian water milfoil is widespread at the Kingsford Reservoir, the density of the stands in most of the reservoir is relatively low. Eurasian water milfoil is prolific in Cowboy Lake. Based on anecdotal evidence, the causes for this abundance in Eurasian water milfoil appear to be related to eutrophication, intense public use, and developed shorelines. With the exception of Cowboy Lake, the expanses of milfoil occurring in the balance of the reservoir occur at low densities.