We Energies
2007 Annual Report - Nuisance Plant Control Survey
Big Quinnesec Falls Reservoir
FERC Project #1980

We Energies' Environmental department staff, Mr. Mike Grisar and Mr. John Hrobar, conducted a survey from a boat of the entire shoreline at the Big Quinnesec Falls Reservoir on August 7, 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 Big Quinnesec Falls 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:

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

Sixteen stands of Eurasian water milfoil were observed at the Big Quinnesec Falls 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 2.40-acres.

Table 1. Eurasian Water Milfoil Stand Data.

Stand # *	Stand/Mat Density	Mat Thickness	Stand Size (acres)
1	2	None	0.40
2	1	None	2.40
3	1	None	0.01
4	1	None	0.01
5	1	None	0.70
6	1	None	0.01
7	1	None	0.01
8	1	None	2.30
9	1	None	0.01
10	1	None	0.01
11	1	None	0.01
12	1	None	0.10

Stand # *	Stand/Mat Density	Mat Thickness	Stand Size (acres)
13	1	None	0.10
14	1	None	0.01
15	1	None	0.01
16	1	None	0.01

Eurasian water milfoil is present in approximately 6.10-acres in the Big Quinnesec Falls Reservoir project area. Cumulatively, the average stand size is 0.38-acres and has an average density rating of 1.06 per stand.

All of the stands in Big Quinnesec have low density ratings (<25% cover), with single Eurasian water milfoil 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*).

Relative to the other reservoirs where Eurasian water milfoil is abundant, it occurs in a few small and sparse stands. Approximately two-thirds of the stands occur in the downstream segment of Big Quinnesec in sheltered bays along the south and southeast shorelines. The relative Eurasian water milfoil can be attributed to steep slopes, deep water, and swift currents occurring within this reservoir. Relatively few slack water alluvial deposits, typical of where Eurasian water milfoil tends occur, are present.