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SPL-031

Aquatic Biologists, Inc. SINCE 1977

Specialists in Lake & Pond Management, Services & Supplies

MEMORANDUM

426 N.W. Cumberland St.
Berlin, WI 54923
(920) 361-4088

copied to all N+ Scott B.

DATE: July 31, 2002

TO: Gilbert Lake Advancement Association
c/o Tom Winkel
4685 Cherokee Dr.
Brookfield, WI 53045

SUBJECT: **2002 Aquatic plant survey results**

During July 2002 an aquatic plant survey was conducted on Gilbert. This was the third survey conducted on the lake, and the second survey done following a large-scale treatment of Eurasian watermilfoil. This treatment and the plant surveys were done as part of a long-term plant management program outlined in the *Gilbert Lake Aquatic Plant Management Plan 2001 – 2005.* The same methods were used to conduct all three surveys.

The results of the 2001 survey showed that Eurasian watermilfoil experienced a 100% decline following treatment. The plant could not be found anywhere in the lake. The results also showed that all native aquatic plant species that were present prior to the treatment were also present after the treatment. Statistical analyses performed on the data showed that there were no significant declines for any native species. Field observations further found that high-value native plants had re-colonized all areas that had been dominated by milfoil.

The results of the 2002 survey were very similar to those of the 2001 survey. The percent frequencies and percent compositions of native plants have not changed markedly (Tables 1 and 2); nor have their distributions by transect (Tables 3 and 4). The 2002 survey was conducted in July instead of September in order to better deal with any recurring Eurasian watermilfoil problems. The minor differences between the two data sets are likely due to seasonal variations in plant density.

No Eurasian watermilfoil was found during the formal plant survey, however several small plants were observed in scattered locations outside of transect lines. The locations of these sites are shown in Figure 1. An effort was made to map the distribution of any milfoil regrowth on July 6th. However no milfoil was observed at this time. The milfoil plants observed during the July 30th plant survey were small and had apparently grown to a visible height since the first inspection of the lake.

Management implications
Because the Eurasian watermilfoil found in Gilbert Lake is both sporadic and in early growth stages, it is unlikely that it will be able to spread very much during the 2002 season. Because growth began so late in the year it is also unlikely that milfoil will be able to reach nuisance levels during the season. Therefore conducting treatments during 2002 is not warranted. Plans should be made and permits applications completed so that the milfoil can be treated as soon as possible in 2003. Total treatment areas for 2003 should be less than one acre.

As recommended in the management plan, an aquatic plant survey should be done again in 2003. An application for a small-scale Lake Management Planning Grant could again be made to cover 75% of the cost of this work.

Conclusions
In all, the aquatic plant management plan established for Gilbert Lake has exceeded expectations. All of the goals of the management plan have been met, specifically:

1) Eurasian watermilfoil was effectively controlled
2) Native plant species were not negatively affected
3) Fishery habitat was not diminished
4) Eurasian watermilfoil will be maintained at sub-nuisance levels with minimal follow-up treatments.

Based on our experiences with this management approach, it appears that an active aquatic plant assessment program coupled with readiness to treat any recurring milfoil growth will be effective in keeping Eurasian watermilfoil under control in Gilbert Lake for the long-term.

Aquatic Biologists, Inc. looks forward to assisting you with your lake management needs in the years to come.

Sincerely,

Chad Cason

Chad Cason,
ABI Staff Biologist

cc: Mary Gansberg
Dan Minter

Table 1. Results of the aquatic plant survey conducted on Gilbert Lake during July, 2002.

Species		Percent Frequency	Percent Composition
Musk Grass	*Chara spp.*	88.2	55.1
Bushy Pondweed	*Najas flexilis*	18.6	11.6
Illinois Pondweed	*Potamogeton illinoensis*	30.0	18.8
Eurasian Water Milfoil	*Myriophyllum spicatum*	0.0	0.0
Floating Leaf Pondweed	*Potamogeton natans*	8.6	5.4
Flatstem Pondweed	*Potamogeton zosteriformis*	5.5	3.4
Sago Pondweed	*Potamogeton pectinatus*	4.5	2.8
Large Leaf Pondweed	*Potamogeton amplifolious*	0.5	0.3
Water Smartweed	*Polygonum amphibium*	1.4	0.8
Water Stargrass	*Zosterella dubia*	0.5	0.3
White Water Lily	*Nymphaea odorata*	1.8	1.4
Filamentous algae	*Spirogyra spp.*	0.5	0.3
no plants found		5.5	

Table 2. Three years of comparative data from Gilbert Lake aquatic plant surveys.

	Percent Frequency / Year		
Species	**2000**	**2001**	**2002**
Musk Grass	80.9	91.4	88.2
Bushy Pondweed	31.8	35.5	18.6
Illinois Pondweed	30.5	41.9	30.0
Eurasian Water Milfoil **	20.9	0.0	0.0
Floating Leaf Pondweed	6.4	4.1	8.6
Flatstem Pondweed	4.5	5.5	5.5
Sago Pondweed	3.6	6.4	4.5
Large Leaf Pondweed	2.7	0.9	0.5
Water Smartweed	1.8	0.9	1.4
Water Stargrass	0.9	0.0	0.5
Spadderdock	0.5	0*	0.0
White Water Lily	0.5	0.9	1.8
Northern Water Milfoil	0.5	0*	0.0
Filamentous Algae	0.0	2.7	0.5
Elodea	0.0	0.5	0.0
no plants found	1.8	3.2	5.5
n =	**13**	**12**	**12**

* Spadderdock, northern watermilfoil and coontail (*Ceratophyllum demersum*) were observed outside of transects during the 2001 survey, and were not recorded in data.

** Eurasian watermilfoil was observed outside of transects during the 2002 survey and was not recorded in data.

Table 3. The percent frequency of plants by individual transect found in the July 2002 survey conducted on Gilbert Lake.

		% frequency by transect																	
Species		**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**	**N**	**O**	**P**	**Q**	**R**
Musk Grass	*Chara spp.*	94	88	58	83	100	100	92	100	75	100	100	75	66	75	83	100	100	100
Eurasian Water Milfoil	*Myriophyllum spicatum*																		
Northern Water Milfoil	*Myriophyllum sibericum*																		
Bushy Pondweed	*Najas flexilis*	31	50	25		38	25		25	50		13		17	8	25		8	25
Spadderdock	*Nuphar variegata*																		
White Water Lily	*Nymphaea odorata*									25									
Water Smartweed	*Polygonum amphibium*																25		
Large Leaf Pondweed	*Potamogeton amplifolius*															8			
Illinois Pondweed	*Potamogeton illinoensis*	25	38	42	25	50	25	33	17	69		56	25	33	8	50	8		25
Floating Leaf Pondweed	*Potamogeton natans*	19	25	8		13				38				8		33		8	
Sago Pondweed	*Potamogeton pectinatus*	6				13				19		6			8	8			13
Flatstem Pondweed	*P. zosteriformis*	13				13			8	31		6		8			8		
Water Stargrass	*Zosterella dubia*											6							
Filamentous algae	*Spirogyra*																		6
no plants found				8	17			8					25	17	25				
Rake hauls per transect		16	8	12	12	8	8	12	12	16	12	16	12	12	12	12	12	12	16

Table 4. The percent frequency of plants by individual transect found in the September 2001 survey conducted on Gilbert Lake.

Species		% frequency by transect																	
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
Musk Grass	*Chara spp.*	*100*	100	92	100	75	100	100	100	75	100	100	100	66	92	83	100	100	69
Eurasian Water Milfoil	*Myriophyllum spicatum*																		
Northern Water Milfoil	*Myriophyllum sibericum*																		
Bushy Pondweed	*Najas flexilis*	44	75	33	25	75	75	17		44		25	33	8	42	58	42	42	38
Spadderdock	*Nuphar variegata*																		
White Water Lily	*Nymphaea odorata*									13									
Water Smartweed	*Polygonum amphibium*																17		
Large Leaf Pondweed	*Potamogeton amplifolius*									6		6							
Illinois Pondweed	*Potamogeton illinoensis*	31	25		8	38	25			75		38	8		25	92	50	8	32
Floating Leaf Pondweed	*Potamogeton natans*	6					3			25				17		8			
Sago Pondweed	*Potamogeton pectinatus*	13								6		19			25	17	25		
Flatstem Pondweed	*P. zosteriformis*	13				13	13			38		6		8					
Water Stargrass	*Zosterella dubia*																		
Comon waterweed	*Elodea canadensis*									6									
Filamentous algae	*Pithophora*											13				17			13
no plants found				8		13								33					6
Rake hauls per transect		16	8	12	12	8	8	12	12	16	12	16	12	12	12	12	12	12	16