

EAGLE LAKE SONAR DEMONSTRATION PROJECT - GRID PERCENT COVER ANALYSIS

Species	Date	Basin	Grid	GRID SQUARE NUMBER																	
				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Chara/Nitella	28-Aug-97	East	N	97.5	97.5	97.5	62.5	85	85	97.5	2.5	2.5	37.5	37.5	2.5	97.5	85	97.5	62.5	97.5	97.5
Potamogeton gramineus	28-Aug-97	East	N																		
Myriophyllum spicatum	28-Aug-97	East	N	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Najas flexilis	28-Aug-97	East	N					2.5	2.5		2.5	2.5	2.5	2.5	15	2.5	2.5	2.5	2.5	2.5	2.5
Potamogeton pusillus	28-Aug-97	East	N	15	15	15	2.5	2.5	15	15	15	15	15	2.5	2.5	15	2.5		15	2.5	37.5
Potamogeton amplifolius	29-Aug-97	East	N		2.5																
Potamogeton zosteriformes	29-Aug-97	East	N																2.5		
Elodea canadensis	28-Aug-97	East	N							2.5											
Ceratophyllum demersum	28-Aug-97	East	N				2.5														
Chara/Nitella	28-Aug-97	East	C										85	85	62.5	97.5	97.5	97.5	97.5	97.5	97.5
Potamogeton gramineus	28-Aug-97	East	C										15	15	15		15	15		15	15
Myriophyllum spicatum	28-Aug-97	East	C	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	15	15	37.5	15	15	15	15	15	15
Potamogeton amplifolius	28-Aug-97	East	C				15		15	15	15		15	15		15	15	15		15	
Ceratophyllum demersum	28-Aug-97	East	C				15	15		15		15			15				2.5		
Potamogeton pusillus	28-Aug-97	East	C											15							
Elodea canadensis	28-Aug-97	East	C	15						15	15		15								
Myriophyllum spicatum	28-Aug-97	East	S	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5
Ceratophyllum demersum	28-Aug-97	East	S	15			15	15		15		15		15			15		15		15
Potamogeton robbinsii	28-Aug-97	West	W	37.5	37.5	62.5	62.5	37.5	15	62.5	62.5	37.5	37.5	15	37.5	15	2.5	15	2.5	2.5	15
Chara/Nitella	28-Aug-97	West	W	15	2.5	2.5	62.5	37.5	62.5	15	2.5	15	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Potamogeton pusillus	28-Aug-97	West	W	2.5				2.5		15			2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Myriophyllum spicatum	28-Aug-97	West	W	15	2.5	15	2.5		2.5	2.5		2.5	2.5	2.5	2.5	2.5		2.5	2.5		
Najas flexilis	28-Aug-97	West	W	2.5	2.5	15						2.5			2.5						
Bidens beckii	29-Aug-97	West	W			2.5															
Myriophyllum spicatum	28-Aug-97	West	C	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	85	85
Potamogeton robbinsii	28-Aug-97	West	C													15	15		15	15	15
Chara/Nitella	28-Aug-97	West	C																	15	
Vallisneria americana	28-Aug-97	West	C			15							15		15	15	15	15	15	15	15
Myriophyllum spicatum	28-Aug-97	West	E	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5
Vallisneria americana	28-Aug-97	West	E		2.5		15		15	2.5	2.5	2.5						2.5	15		
Potamogeton robbinsii	28-Aug-97	West	E	15	2.5	15	2.5	15	15	2.5	2.5	2.5					2.5	2.5	2.5		15
Heteranthera dubia	28-Aug-97	West	E	2.5																	
Potamogeton pusillus	29-Aug-97	West	E	15																	
Potamogeton amplifolius	28-Aug-97	West	E			15				15											
Potamogeton praelongus	28-Aug-97	West	E		2.5	15	15	2.5							15						

EAGLE LAKE SONAR DEMONSTRATION PROJECT - GRID PERCENT COVER ANALYSIS

Species	Date	Basin	Grid	GRID SQUARE NUMBER																	
				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Chara/Nitella	17-Sep-96	East	N	97.5	97.5	97.5	97.5	97.5	85	97.5	85	15	37.5	15	15	97.5	85	85	37.5	85	97.5
Potamogeton gramineus	17-Sep-96	East	N	15	37.5	37.5	15	15	15	15	15	15	2.5	15	15	15	15	15	15	15	15
Myriophyllum spicatum	17-Sep-96	East	N		15	2.5				2.5	15	15	2.5	15			2.5	15		15	2.5
Najas flexilis	17-Sep-96	East	N												2.5		15		15		15
Potamogeton pusillus	17-Sep-96	East	N													2.5	2.5			2.5	2.5
Elodea canadensis	17-Sep-96	East	N										2.5								
Ceratophyllum demersum	17-Sep-96	East	N					2.5													
Chara/Nitella	17-Sep-96	East	C	37.5			37.5			15			62.5	37.5	62.5	97.5	85	85	97.5	97.5	85
Potamogeton gramineus	17-Sep-96	East	C											15	15	15	15	15	15	2.5	15
Myriophyllum spicatum	17-Sep-96	East	C	85	85	97.5	37.5	97.5	97.5	85	97.5	85	15	37.5	37.5	15	15	15	15	15	15
Potamogeton amplifolius	17-Sep-96	East	C				15			15	15	15	15	15	37.5	15	15	15			2.5
Ceratophyllum demersum	17-Sep-96	East	C			2.5	15	2.5	15	2.5	2.5	2.5				2.5			2.5		2.5
Najas flexilis	17-Sep-96	East	C										2.5					2.5			
Potamogeton pusillus	17-Sep-96	East	C											2.5							
Myriophyllum spicatum	17-Sep-96	East	S	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5
Ceratophyllum demersum	17-Sep-96	East	S			2.5		15		2.5			2.5		15		15				
Potamogeton robbinsii	17-Sep-96	West	W	37.5	37.5	37.5	37.5	37.5	15	37.5	37.5	15	37.5	15	37.5	37.5	15	37.5	15	15	15
Chara/Nitella	17-Sep-96	West	W	37.5	15	62.5	37.5	37.5	85	37.5	62.5	85	62.5	62.5	85	37.5	37.5	15	37.5	37.5	15
Potamogeton pusillus	17-Sep-96	West	W						2.5	2.5					2.5	15					15
Myriophyllum spicatum	17-Sep-96	West	W	15	15	15	15	15		15	37.5	15	15		15	15					15
Najas flexilis	17-Sep-96	West	W												15						
Myriophyllum spicatum	17-Sep-96	West	C	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	85	62.5	85	97.5	62.5	62.5	37.5
Potamogeton robbinsii	17-Sep-96	West	C			15		15		15						15	15	15	15	15	37.5
Chara/Nitella	17-Sep-96	West	C																15	15	15
Bidens beckii	17-Sep-96	West	C													15			15		
Najas flexilis	17-Sep-96	West	C										15					15			15
Vallisneria americana	17-Sep-96	West	C	15	15	15		15					15	15		15	15				15
Myriophyllum spicatum	17-Sep-96	West	E	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5
Vallisneria americana	17-Sep-96	West	E	2.5	15			15				15				15					15
Potamogeton robbinsii	17-Sep-96	West	E	15	15	15				15						15		15	15		15
Bidens beckii	17-Sep-96	West	E																	37.5	15
Potamogeton amplifolius	17-Sep-96	West	E														15	15			
Potamogeton praelongus	17-Sep-96	West	E	15	15	15	15	15	15	15	15	15	15	15	15						15

EAGLE LAKE SONAR DEMONSTRATION PROJECT - DIVER SWIMOVER SURVEY

SPECIES	DATE	BASIN	Depth (m)							
			0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8
Chara/Nitella	17-Sep-96	West	2.5	2.5	10	10	75	37.5	37.5	37.5
Potamogeton gramineus	17-Sep-96	West	10	20	10	10	2.5			
Myriophyllum spicatum	17-Sep-96	West		2.5	37.5	75	2.5	2.5		
Potamogeton amplifolius	17-Sep-96	West		10	20	37.5	2.5			
Ceratophyllum demersum	17-Sep-96	West		2.5	2.5	2.5				
Najas flexilis	17-Sep-96	West	2.5	10	10	37.5	20	2.5	2.5	
Potamogeton pusillus	17-Sep-96	West			2.5	10	20	20	2.5	
Eriocaulon septangulare	17-Sep-96	West	2.5	2.5						
Lobelia dortmanna	17-Sep-96	West	10	2.5						
Vallisneria americana	17-Sep-96	West		2.5	10	10	2.5			
Elodea canadensis	17-Sep-96	West	2.5	10	10	10	2.5	2.5	2.5	2.5
Bidens beckii	17-Sep-96	West			2.5	10	2.5	2.5		
Heteranthera dubia	17-Sep-96	West	10	2.5	2.5	2.5				
Potamogeton praelongus	17-Sep-96	West			10	20	2.5			
Potamogeton robbinsii	17-Sep-96	West			2.5	37.5	37.5	75	2.5	2.5
Sparganium sp.	17-Sep-96	West	2.5	2.5						
Chara/Nitella	17-Sep-96	East	2.5	2.5			20	75	20	2.5
Potamogeton gramineus	17-Sep-96	East	2.5	2.5	10	2.5	2.5			
Myriophyllum spicatum	17-Sep-96	East	2.5	10	75	75	2.5			
Potamogeton amplifolius	17-Sep-96	East		2.5		2.5	2.5			
Ceratophyllum demersum	17-Sep-96	East		2.5	2.5	2.5				
Najas flexilis	17-Sep-96	East	2.5	20	10	2.5	2.5	2.5	2.5	
Potamogeton pusillus	17-Sep-96	East		2.5	2.5	10	20	2.5		
Eriocaulon septangulare	17-Sep-96	East	2.5							
Sagittaria graminea	17-Sep-96	East	2.5	2.5						
Vallisneria americana	17-Sep-96	East		20	10					
Elodea canadensis	17-Sep-96	East	2.5	2.5	2.5	2.5	2.5	2.5	2.5	
Bidens beckii	17-Sep-96	East			2.5	10	10	2.5		
Potamogeton praelongus	17-Sep-96	East			10	20	2.5			
Potamogeton robbinsii	17-Sep-96	East		2.5	2.5	20	75	10	2.5	
Nymphaea odorata	17-Sep-96	East		20						
Potamogeton zosteriformes	17-Sep-96	East		2.5	2.5	2.5				
Brasenia schreberi	17-Sep-96	East	2.5	2.5						
Nuphar luteum	17-Sep-96	East				2.5				

Summary

Appendix I. Number of species per square meter in the grid systems.
Results are presented by survey year.

Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	Mean No. of species	SD
1996																				
East-S	1	1	2	1	2	1	2	1	1	2	1	2	1	2	1	1	1	1	1.3	0.5
East-C	2	1	2	4	2	2	4	3	3	4	5	5	4	5	5	3	5	3	3.4	1.3
East-N	2	3	3	2	3	3	3	3	3	4	4	3	4	4	3	3	4	3	3.2	0.6
Site Total																			2.6	1.3
West-C	2	2	3	1	3	1	2	1	1	3	2	1	4	3	3	4	5	5	2.6	1.3
West-E	4	4	3	2	3	2	3	2	2	2	2	1	3	2	4	3	2	4	2.7	0.9
West-W	3	3	3	3	3	3	4	3	3	3	2	5	4	2	2	2	4	3	3.1	0.8
Site Total																			2.8	1.0
1997																				
East-N	3	4	3	3	4	4	4	4	4	4	4	4	4	4	3	5	4	4	3.8	0.5
East-S	2	1	1	2	2	1	2	1	2	1	2	1	1	2	1	2	1	2	1.5	0.5
East-C	2	1	1	3	2	2	4	3	2	5	5	4	3	4	4	3	4	3	3.1	1.2
Site Total																			2.8	1.3
West-C	1	1	2	1	1	1	1	1	1	1	2	1	3	3	2	4	3	3	1.8	1.0
West-E	4	4	4	4	3	3	4	3	3	1	1	1	1	2	3	3	1	2	2.6	1.2
West-W	5	4	5	3	3	3	4	2	4	4	4	5	4	3	4	4	3	3	3.7	0.8
Site Total																			2.7	1.3
1998																				
East-N	3	2	3	3	4	4	3	4	2	5	3	2	4	4	5	3	4	5	3.5	1.0
East-S	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.0	0.0
East-C	1	1	1	1	1	1	1	1	3	3	3	2	2	3	2	3	4	5	2.1	1.2
Site Total																			2.2	1.4
West-C	1	1	1	1	1	1	2	2	2	1	1	1	1	2	1	3	1	3	1.4	0.7
West-E	1	3	1	1	1	4	1	1	1	1	1	1	1	1	1	1	1	1	1.3	0.8
West-W	4	3	3	3	3	2	3	3	4	3	3	3	3	2	3	3	4	3	3.1	0.5
Site Total																			1.9	1.1

Grand mean ##
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West Grid - 1998



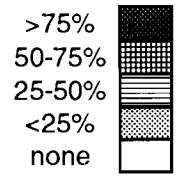
West Grid - 1997



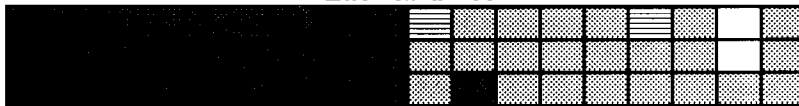
West Grid - 1996



Eurasian watermilfoil
Percent Cover



East Grid - 1998



East Grid - 1997



East Grid - 1996



	# sp/grid 1996	# sp/grid 1997	# sp/grid 1998
	2	2	1
	7	7	5
	7	9	6
mean	5.3	6	4
SD	6	4	3
	6	7	4
	5	6	5
	5.7	5.7	4.0