



Underwater View of EWM Found in Lake Frances, October 3, 2017

Eurasian Watermilfoil Removal and Survey For Lake Frances, Le Sueur Co, Minnesota, October 3, 2017

2017 Eurasian Watermilfoil Removal Date: October 3, 2017

Prepared for:
Le Sueur County and
MnDNR



Prepared by:
Steve McComas
Blue Water Science
St. Paul, MN 55116

November 2017

Eurasian Watermilfoil Removal and Survey For Lake Frances, Le Sueur Co, Minnesota, October 3, 2017

Eurasian watermilfoil (EWM) was documented by the MnDNR survey in Lake Frances on August 23 and 29, 2017. For EWM control, hand pulling was the preferred method because of the number of native species present including northern watermilfoil. On October 3, 2017, Blue Water Science hand pulled all the Eurasian watermilfoil that was observed within a 2.13 acre area (Figure 1).

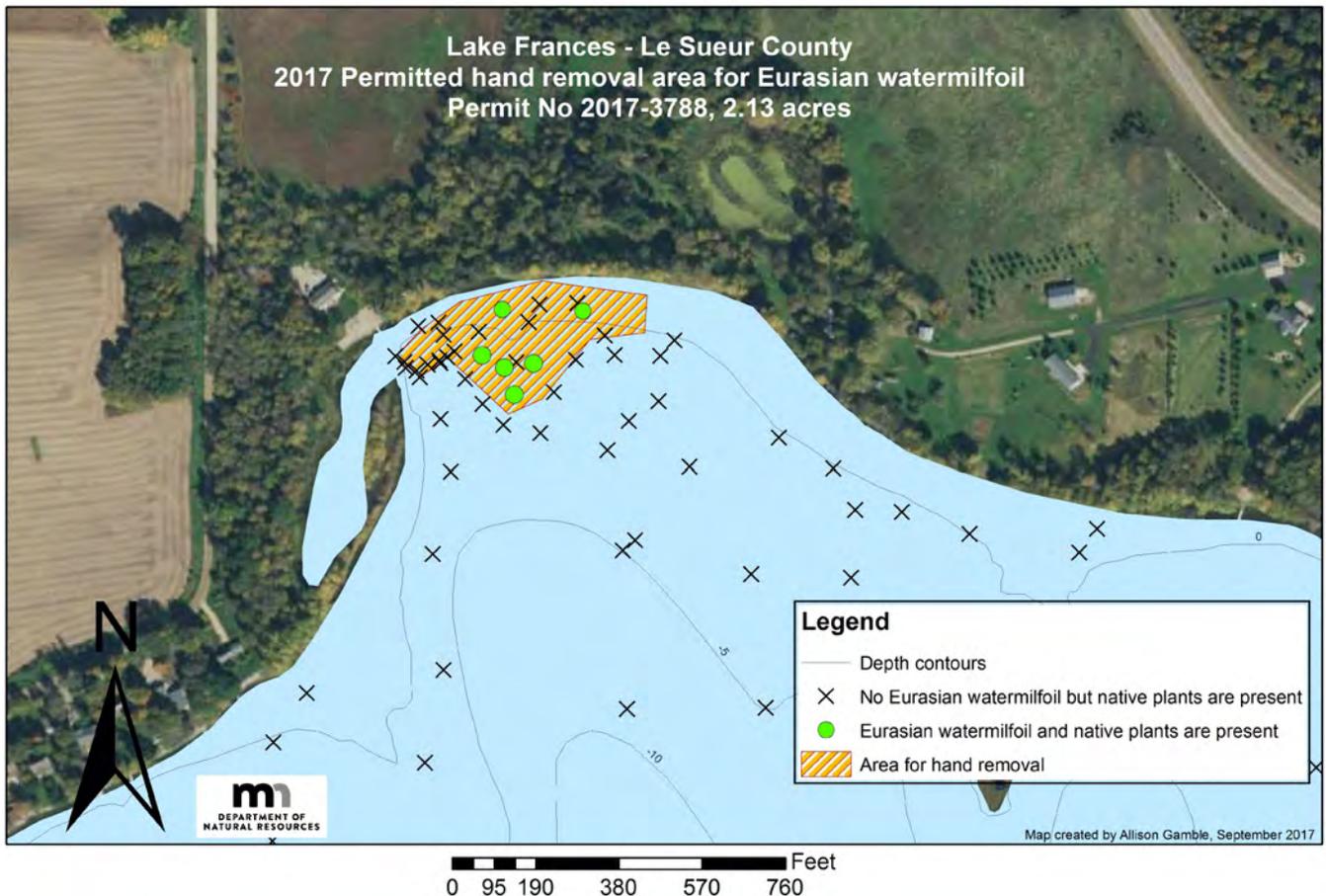


Figure 1. MnDNR permitted hand removal area for Eurasian watermilfoil (map is from MnDNR).

Results of EWM Hand Removal Conducted on October 3, 2017

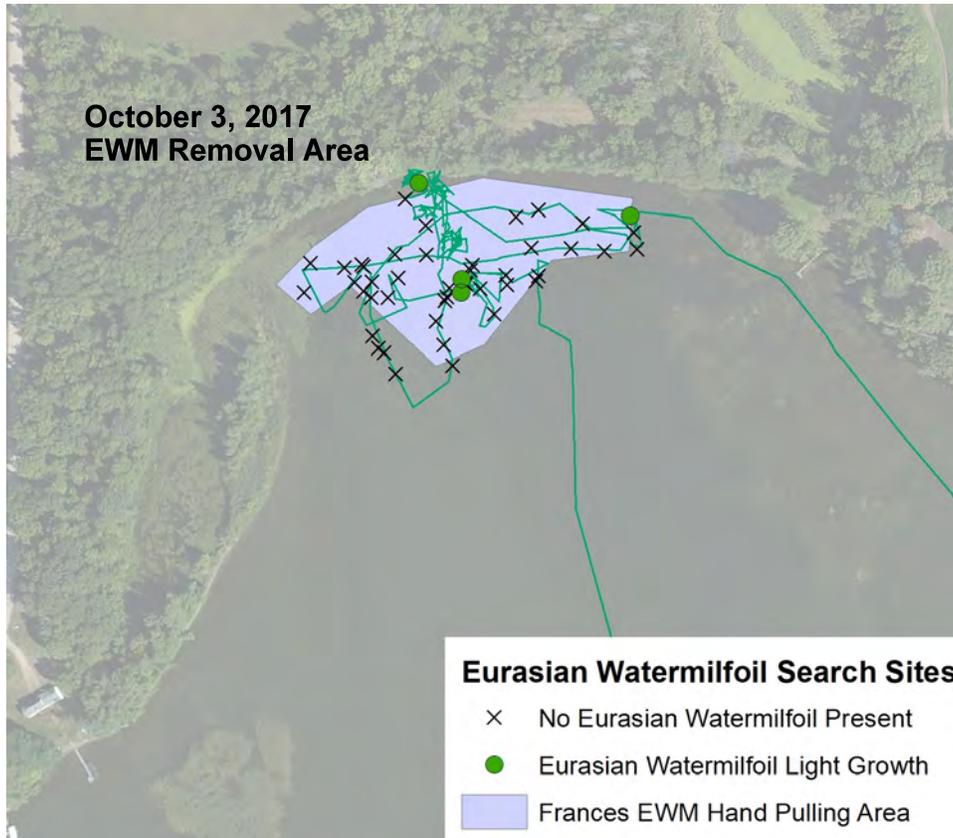


Figure 2. Eurasian watermilfoil hand-pulling removal location on October 3, 2017.



Figure 3. [left] EWM was removed from Lake Frances on October 3, 2017. Plants were put into tubs and removed from the lake. Plants were disposed in a compost site.

[right] Some EWM floating fragments in the removal area were found to have rootlets growing. It is possible floating fragments had previously drifted to other parts of Lake Frances. Autofragmentation by EWM is natural and occurs annually with EWM stems.

Native Plants in the EWM Management Area

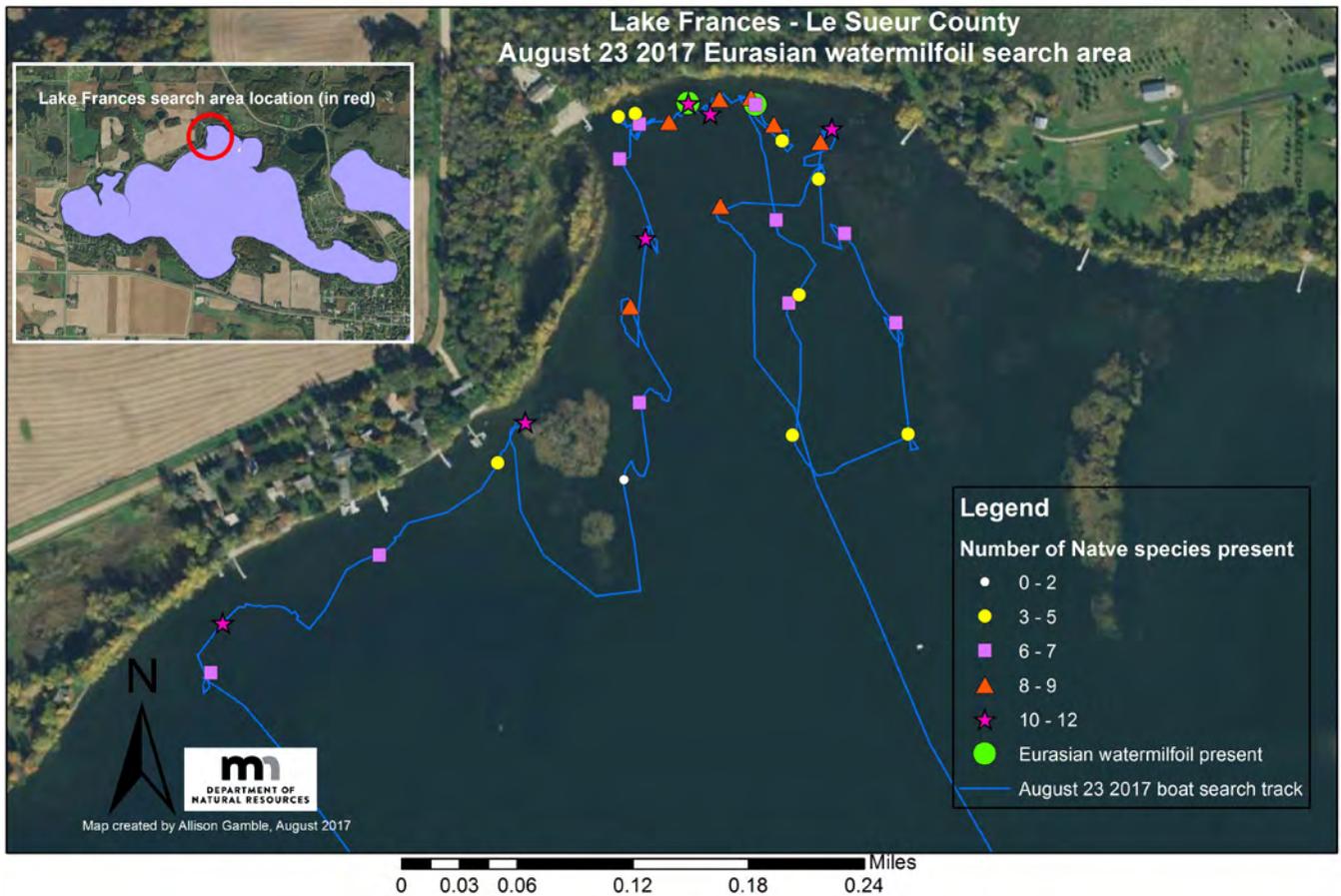


Figure 4. Native species were common in the EWM management area (source: MnDNR).

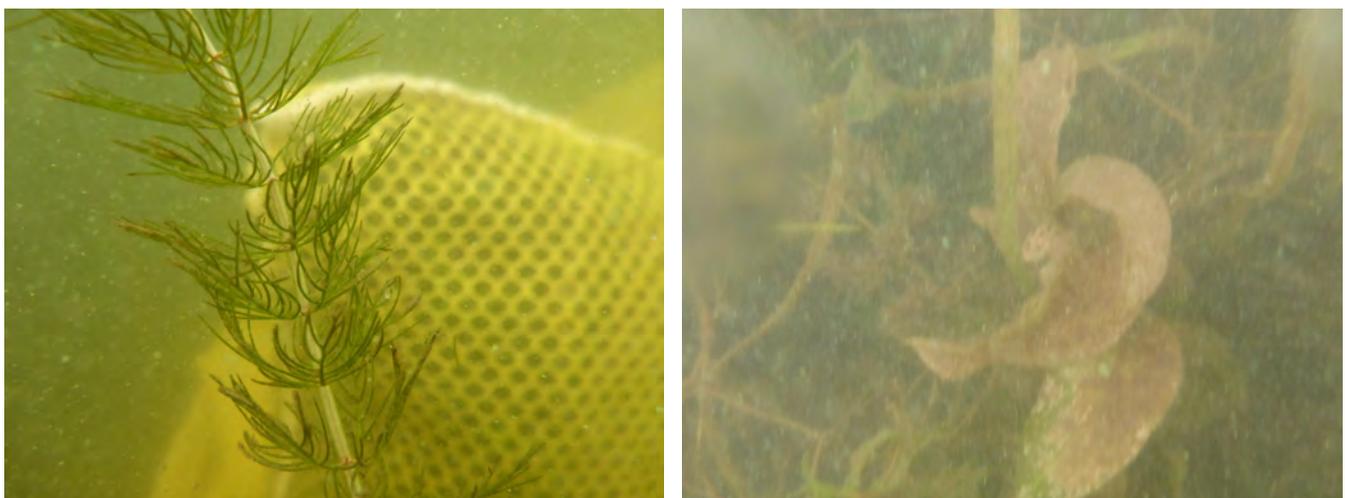


Figure 5. [left] Northern watermilfoil, a native species that looks a lot like Eurasian watermilfoil. [right] Broadleaf pondweed, a native species commonly found in the EWM management area.

EWM Distribution in Lake Frances

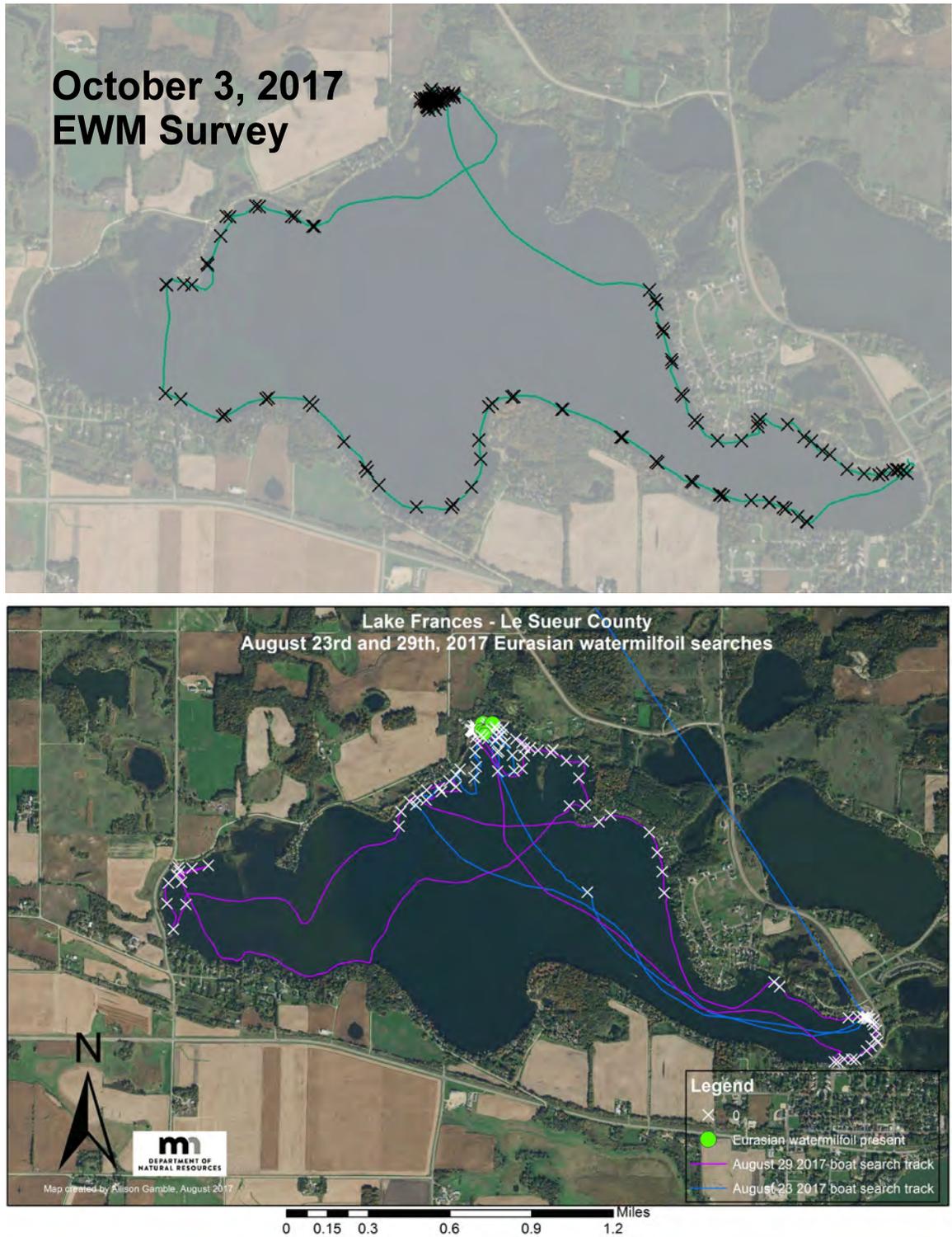


Figure 6. [top] Sample points were taken by Blue Water Science in a meander survey at locations around Lake Frances on October 3, 2017. These points complement the survey conducted by MnDNR [right] in August of 2017. Aquatic plant data for individual sites in October can be found in the Appendix.

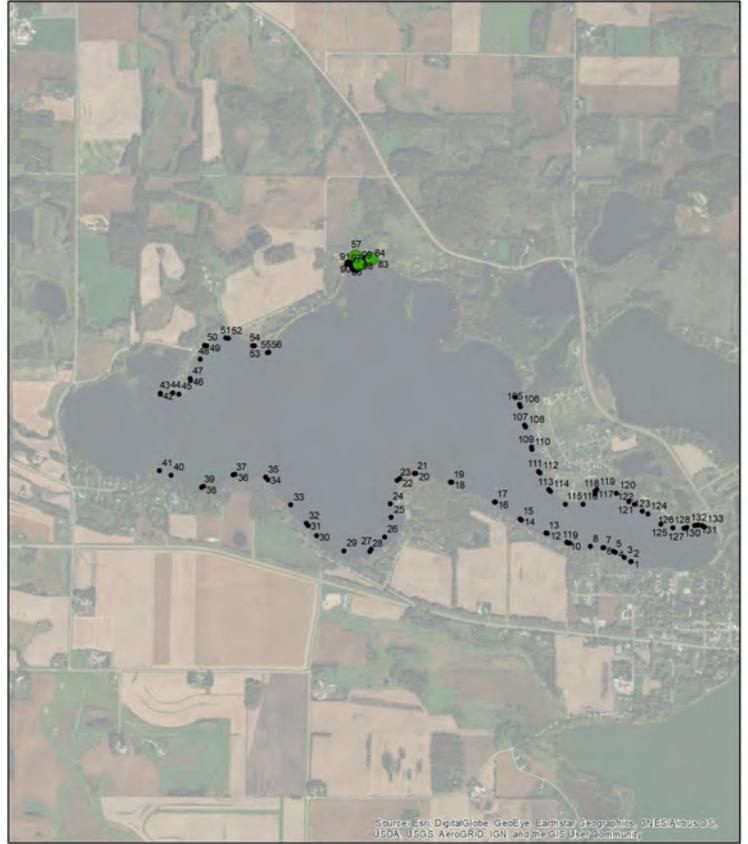
APPENDIX

Lake Frances Eurasian Watermilfoil Search
October 3, 2017



UTM NAD 1983
Blue Water Science

Lake Frances Eurasian Watermilfoil Search
October 3, 2017



UTM NAD 1983
Blue Water Science

Maps of site locations.

Table A1. Aquatic plant occurrence in Lake Frances on October 3, 2017.

Site	Depth (ft)	Cabbage	Chara	Clasp-ingleaf	Coontail	Curlyleaf	EWM	Flatstem	Illinois	Marigold	Naiads	Nitella	NWM	Sago	Water celery	Water stargrass	White-stem	No Plants	Notes
1	7				1	1													
2	8				2	1													
3	7				3										1				
4	7				2										1				
5	8				2														
6	4		1										1						
7	4		1	1		1							1		1				
8	5		2								1				1				
9	5		2															1	
10	5																		
11	6		2								1								
12	7		1												1				
13	8		2								1				1				
14	6		2		1										1				
15	6		2		1						1				1				
16	6				1						1						1		
17	6				1						2								
18	6																	1	
19	7		2	1									1						
20	7				2						1								
21	7		2								2								
22	7																		
23	6				1	1			1						1	1			
24	6																		
25	7																		
26	8			1	1								1					1	
27	5			1	3														
28	7																		
29	7								1										
30	6				3														
31	6				1								1						
32																			
33																			
34	5				2			1					1		1				
35	5				2			1							1				
36	5		1																
37	5		1												1				
38	5				1													1	
39	5				3					1			1						
40	5																		
41	4		2		1						1				1				
42	4		2		1	1									1				
43	7		1			1						1							
44	6		1								1				1				
45	5		2								1				2				
46	9				2														
47	8				2					1									
48	10				1														
49	4				1														
50	4				1	1		1							2				
51	5					1							1						
52	6				1								1						
53	5			1							2		1		1				
54	5			1							2		1		1				
55	5		2						1					1					
56	5		2																
57							1												EWM removal
83							1												EWM removal
93							1												EWM removal
95							1												EWM removal
104	10										1				1				
105	8										2				1				
106	7										2				1				
107	6																		1
108	6																		1
109	5																		1
110	6										2								
111	5																		1
112	6		1								1				1				
113	5											1	1		1				
114	6			1									2		2				
115	19																		1
116	17																		1
117	4				3														
118	4				1														
119	4				2						1				1				
120	4				1			1				1							
121	3	1			2					2									
122	4	1			2					2									
123	6									1			1		2				
124	6									1					2				
125	10				2	1													
126	8			1											2				
127	6												1						
128	6			1											1				
129	6												1		1				
130	6												1						
131	6									1									
132	6																		
133	5			1		1									3				
Average		1.0	1.6	1.0	1.6	1.0	1.0	1.0	1.0	1.3	1.4	1.0	1.1	1.0	1.3	1.0	1.0		
Occur (90 sites)		2	21	10	34	10	4	4	3	7	20	3	17	1	32	2	3	8	
% occur		2	23	11	38	11	4	4	3	8	22	3	19	1	36	2	3		



Stream inflow into Lake Frances in October 2017.