

# Aquatic Plant Management LLC



## Upper Kaubashine Lake EWM Removal Report Summer 2015

1696 Silver Beach Drive Lac du Flambeau, WI 54538



# Upper Kaubashine Lake EWM Removal Summary 2015

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**Summary:** On June 27<sup>th</sup>, 28<sup>th</sup>, July 30<sup>th</sup>, August 4<sup>th</sup> and 12<sup>th</sup>, Aquatic Plant Management LLC (APM) conducted hand removal services of Eurasian Watermilfoil (EWM) on Upper Kaubashine Lake. Our experienced divers spent a combined total of 109.05 hours on the water and were able to successfully remove approximately **587 gallons** of EWM from the lake.

**Dive Conditions:** Conditions on 6/27/15 were excellent, with little cloud cover, light winds and abundant sunshine. Conditions on 6/28/15 were less than desirable with overcast sky, mild winds, and the occasional rain shower. Incoming T-storms forced our crew off the water after about three hours of diving. Conditions on 7/30/15, 8/4/15, and 8/12/15 were all excellent, with clear skies, light to mild winds and abundant sunshine. Water clarity on Upper Kaubashine is extremely high, with underwater visibility of 25+ feet. The substrate on U. Kaubashine typically varied from sandy/organic to sandy/rocky. In some of the rockier areas, complete removal of the root ball was hampered by the dense substrate, but the majority was able to be removed. For the first three days of hand-harvesting activities, the EWM was in healthy condition, with stems at their peak tensile strength. However, on 8/4/15 and 8/12/15 the plants were noticeably more brittle and prone to fragmentation. Of the areas marked by Onterra as SCATTERED, site A-15 and F-15 had the densest growth of individual plants. The majority of the larger EWM clumps and colonies encountered were found from the North side of A-15 to the North side of D-15.

**Recommendations:** During the summer of 2016, we will be implementing new diving strategies that will allow us to target some of the deeper plants found on the lake that are near the limits of a diver using a snorkel. By our standards, the EWM infestation on Upper Kaubashine is still manageable, and with continued monitoring and an annual hand-harvesting effort, can be kept in check.



# Detailed Summary of Diving Activities

Date	Dive Location	Latitude	Longitude	Time Underwater (Min)	Estimated EWM Removed (Gallons)	EWM Density Rating	Comments
6/27/15	F-15	45.79464	089.74502	45	15	4	Sandy substrate. Located and removed one large clump of plants, surrounded by scattered individual plants. EWM was located at a depth of 6-10 feet. EWM consisted of strong healthy plants.
6/27/15	E-15	45.79486	089.74107	80	35	2	Sandy substrate. EWM growth consisted of scattered individual plants with the occasional small clump. Plants were located in 4-12 feet of water. EWM consisted of strong healthy plants.
6/27/15	D-15	45.79267	089.73982	60	30	3	Sandy substrate. Located and removed one clump of plants, as well as several tall individual plants. EWM was located in 5-12 feet of water.
6/27/15	C-15	45.79165	089.73724	45	20	2	Sandy substrate. EWM growth consisten mainly of scattered individual plants, ranging in height from 1-6 feet. Plants were removed from a depth of 3-12 feet.
6/27/15	B-15	45.78645	089.73505	50	20	2	Sandy substrate. EWM growth consisted of scattered tall plants. EWM was located in 6-14 feet of water.
6/28/15	A-15	45.78339	089.73706	60	25	3	Soft sandy substrate. EWM growth consisted of scattered individual plants found within colonies of Nortern Watermilfoil. EWM was located at depths ranging from 4-10 feet.
6/28/15	A-15	45.78400	089.73822	40	15	3	Soft sandy substrate. EWM growth consisted of scattered individual plants found within colonies of Nortern Watermilfoil. EWM was located at depths ranging from 4-10 feet.
6/28/15	F-15	45.79503	089.74575	35	10	3	Sandy substrate. EWM growth consisted of scattered individual plants with the occasional small clump. Plants were located in 4-12 feet of water. EWM consisted of strong healthy plants.

EWM Density Rating	0	1	2	3	4	5	6	7	8	9	10
Plants per 5 Square Yards	0	1-2	3-4	5-6	7-8	9-10	11-12	13-14	15-16	17-18	19-20



# Detailed Summary of Diving Activities

Date	Dive Location	Latitude	Longitude	Time Underwater (Min)	Estimated EWM Removed (Gallons)	EWM Density Rating	Comments
7/30/15	A-15	45.78349	089.73810	35	15	3	Sandy/rocky substrate. Sparse single stem plants. EWM was located in 4-14 feet of water.
7/30/15	A-15	45.78326	089.73769	60	25	3	Soft sandy substrate. EWM growth consisted of scattered individual plants found within colonies of Northern Watermilfoil. EWM was located at depths ranging from 4-10 feet.
7/30/15	A-15	45.78316	089.73749	60	30	4	Soft sandy substrate. EWM growth consisted of several small clumps surrounded by scattered individual plants found within colonies of Northern Watermilfoil. EWM was located at depths from 4-10 feet.
7/30/15	A-15	45.78316	089.73749	70	30	3	Soft sandy substrate. EWM growth consisted of several small clumps surrounded by scattered individual plants found within colonies of Northern Watermilfoil. EWM was located at depths from 4-10 feet.
7/30/15	A-15	45.78342	089.73717	40	25	3	Sandy/rocky substrate. Located and removed several clumps of 4-5 plants, surrounded by scattered individual plants. Abundant growth of native plants present. EWM was located in 5-10 feet of water
7/30/15	A-15	45.78343	089.73687	30	15	3	Sandy/rocky substrate. Located and removed 2-3 clumps of plants surrounded by scattered groups of 2-3 plants.

<b>EWM Density Rating</b>	0	1	2	3	4	5	6	7	8	9	10
<b>Plants per 5 Square Yards</b>	0	1-2	3-4	5-6	7-8	9-10	11-12	13-14	15-16	17-18	19-20



# Detailed Summary of Diving Activities

Date	Dive Location	Latitude	Longitude	Time Underwater (Min)	Estimated EWM Removed (Gallons)	EWM Density Rating	Comments
8/4/15	A-15	45.78390	089.73569	45	5	2	Sandy substrate. EWM covered in algal growth, obscuring some plants and causing them to lay over near the bottom. Plants becoming brittle and prone to fragmentation. EWM was located in 4-8 feet of water.
8/4/15	B-15	45.78574	089.73513	40	12	2	Sandy substrate. Large colonies of NWM present. Located a few large EWM plants in 4-8 feet of water. EWM was unobscured and significantly stronger than plants at A-15.
8/4/15	B-15	45.78692	089.73501	30	10	3	Sandy substrate. EWM growth consisted of scattered tall plants. EWM was located in 6-14 feet of water.
8/4/15	C-15	45.79071	089.73622	60	80	6	Sandy substrate. Located and removed two dense colonies roughly 20' x 20' in size. Removed several scattered individual plants within the area. EWM was located in 6-14 feet of water
8/4/15	C-15	45.79090	089.73667	45	45	4	Sandy substrate. EWM growth consisted mainly of small clumps of 3-4 plants, located in 8-14 feet of water.
8/4/15	D-15	45.79162	089.73717	40	30	3	Sandy/organic substrate. EWM growth consisted mainly of tall scattered individual plants, with one medium sized clump of plants. EWM was marginally more brittle than B-15 and C-15.

EWM Density Rating	0	1	2	3	4	5	6	7	8	9	10
Plants per 5 Square Yards	0	1-2	3-4	5-6	7-8	9-10	11-12	13-14	15-16	17-18	19-20



# Detailed Summary of Diving Activities

Date	Dive Location	Latitude	Longitude	Time Underwater (Min)	Estimated EWM Removed (Gallons)	EWM Density Rating	Comments
8/12/15	D-15	45.79212	089.73947	60	15	2	Sandy substrate. Abundant NWM in the area. Located and removed a few small clumps of plants from 8-14 feet of water. EWM becoming very brittle and prone to fragmentation.
8/12/15	D-15	45.79209	089.74023	45	30	6	Sandy substrate. Located and removed one dense colony of EWM surrounded by several smaller individual plants from a depth of 7-10 feet. EWM becoming very brittle and prone to fragmentation.
8/12/15	E-15	45.79447	089.74025	50	10	2	Sandy/organic substrate. Abundant native aquatic plant growth. EWM growth consisted mainly of scattered individual plants located in 3-12 feet of water. EWM was less brittle at E-15 than at D-15.
8/12/15	E-15	45.79484	089.74084	60	10	1	Sandy/organic substrate. Abundant native aquatic plant growth. EWM growth consisted mainly of scattered individual plants located in 7-12 feet of water. EWM was less brittle at E-15 than at D-15.
8/12/15	A-15	45.78327	089.73731	30	10	1	Sandy/rocky substrate. Located and removed several scattered groups of 2-3 plants. EWM was located in 4-10 feet of water
8/12/15	F-15	45.79472	089.74515	25	20	6	Sandy/organic substrate. Abundant native aquatic plant growth. Located and removed a dense clump of short (2-3 feet) plants located in roughly 10 feet of water. Also removed 30-40 individual plants from the shallower (4-8 feet) parts of the target area.

<b>EWM Density Rating</b>	0	1	2	3	4	5	6	7	8	9	10
<b>Plants per 5 Square Yards</b>	0	1-2	3-4	5-6	7-8	9-10	11-12	13-14	15-16	17-18	19-20



# Map Created by Onterra LLC

