

Appendix A – Lake Waubesa Plant Statistics 2017

Table 1: 2017 Aquatic Plant Community Statistics, Lake Waubesa, Dane County, WI

Total number of sites visited	592
Total number of sites with vegetation	259
Total number of sites shallower than maximum depth of plants	394
Frequency of occurrence at sites shallower than maximum depth of plants	65.74
Simpson Diversity Index	0.68
Maximum depth of plants (ft)**	10.00
Average number of all species per site (shallower than max depth)	1.05
Average number of all species per site (veg. sites only)	1.59
Average number of native species per site (shallower than max depth)	0.84
Average number of native species per site (veg. sites only)	1.32
Species Richness	14
Species Richness (including visuals)	14
*Filamentous algae is no longer included in species richness by WI DNR	

Table 2: 2017 Aquatic Plant Taxa-Specific Statistics, Lake Waubesa, Dane County, WI

	Frequency of occurrence within vegetated areas (%)	Frequency of occurrence at sites shallower than maximum depth of plants	Relative Frequency (%)	Number of sites where species found	Average Rake Fullness
Eurasian water milfoil	31.27	20.56	19.66	81	1
Coontail	82.24	54.06	51.70	213	1.45
Muskgrasses	5.02	3.30	3.16	13	1.08
Elodea, Common waterweed	3.86	2.54	2.43	10	1
Water star-grass	19.31	12.69	12.14	50	1.12
Small duckweed	3.86	2.54	2.43	10	1
White water lily	0.39	0.25	0.24	1	1
Leafy pondweed	0.39	0.25	0.24	1	1
Clasping-leaf pondweed	0.77	0.51	0.49	2	1
Flat-stem pondweed	0.77	0.51	0.50	2	1
Sago pondweed	2.70	1.78	1.70	7	1
Wild celery	6.18	4.06	3.88	16	1
Common watermeal	0.39	0.25	0.24	1	1
Horned pondweed	1.93	1.27	1.21	5	1
Filamentous algae	61.78	40.61	*	160	1.01
*Relative frequency of Filamentous algae is no longer calculated by WI DNR					

Table 3: Historical Floristic Quality Index, Lake Waubesa, Dane County, WI

Genus	Species	Common Name	Coefficient of Conservatism		
			2006	2011	2017
<i>Bolboschoenus</i>	<i>fluviatilis</i>	River bulrush	---	6	---
<i>Ceratophyllum</i>	<i>demersum</i>	Coontail	3	3	3
<i>Chara</i>	<i>sp.</i>	Muskgrass	---	7	7
<i>Elodea</i>	<i>canadensis</i>	Common waterweed	3	3	3
<i>Heteranthera</i>	<i>dubia</i>	Water star-grass	6	6	6
<i>Lemna</i>	<i>minor</i>	Small duckweed	4	4	4
<i>Myriophyllum</i>	<i>sibiricum</i>	Northern watermilfoil	6	---	---
<i>Nymphaea</i>	<i>ordata</i>	White water lily	---	---	6
<i>Potamogeton</i>	<i>foliosus</i>	Leafy pondweed	6	---	6
<i>Potamogeton</i>	<i>richardsonii</i>	Clasping-leaf pondweed	5	5	5
<i>Potamogeton</i>	<i>zosteriformis</i>	Flat-stem pondweed	6	6	6
<i>Spirodela</i>	<i>polyrhiza</i>	Large duckweed	5	5	---
<i>Stuckenia</i>	<i>pectinata</i>	Sago pondweed	3	---	3
<i>Typha</i>	<i>angustifolia</i>	Narrow-leaved cattail	1	---	---
<i>Vallisneria</i>	<i>americana</i>	Wild celery	6	6	6
<i>Wolffia</i>	<i>Columbiana</i>	Common watermeal	---	---	5
<i>Zannichellia</i>	<i>palustris</i>	Horned pondweed	7	7	7
Total Species			13	11	13
Mean C			4.69	5.27	5.15
Floristic Quality Index (FQI)			16.92	17.49	18.58

Please note: There is no Coefficient of Conservatism for exotic species such as Eurasian Watermilfoil or for species not identified to the species level (*Sagittaria sp.*).

Coefficient of Conservatism C

- 0-3 taxa found in wide variety of plant communities and very tolerant of disturbance.
- 4-6 taxa typically associated with specific plant communities and tolerate moderate disturbance.
- 7-8 taxa found in narrow range of plant communities and tolerate minor disturbance.
- 9-10 taxa restricted to a narrow range of synecological conditions, with low tolerance of disturbance.

Table 4: Historical Aquatic Plant Community Statistics, Lake Waubesa, Dane County, WI

	2006	2011	2017
F.o.o. at sites shallower than maximum depth of plants	52.61	63.17	65.74
Most Dominant Species*	Coontail	Coontail	Coontail
	Small Duckweed	Eurasian Water-milfoil	Filamentous Algae
	Filamentous Algae	Flat-stem Pondweed	Eurasian Water-milfoil
	Leafy Pondweed	Horned Pondweed	Water Star-grass
	Eurasian Watermilfoil	Water Star-grass	Wild Celery
Maximum Depth of Plants	14	11	10
Species Richness	14	14	15
Community FQI	16.92	17.49	18.58
Average Coefficient of Conservatism	4.69	5.27	5.15
* - Based on number of sample points collected at. Visual observations are included.			

Table 5: Historical Aquatic Plant Occurrences, Lake Waubesa, Dane County, WI

Genus	Species	Common Name	% Relative F.o.o.		
			2006	2011	2017
<i>Algae</i>	<i>sp.</i>	Filamentous algae	27.5	0.6	**
<i>Bolboschoenus</i>	<i>fluviatilis</i>	River bulrush	---	0.2	---
<i>Ceratophyllum</i>	<i>demersum</i>	Coontail	32.9	27.3	51.7
<i>Chara</i>	<i>sp.</i>	Muskgrass	---	0.6	3.2
<i>Elodea</i>	<i>canadensis</i>	Common waterweed	0.9	4.2	2.4
<i>Heteranthera</i>	<i>dubia</i>	Water star-grass	2.6	5.2	12.1
<i>Lemna</i>	<i>minor</i>	Small duckweed	0*	2.0	2.4
<i>Nymphaea</i>	<i>ordata</i>	White water lily	---	---	0.2
<i>Myriophyllum</i>	<i>sibiricum</i>	Northern watermilfoil	4.3	---	---
<i>Myriophyllum</i>	<i>spicatum</i>	Eurasian watermilfoil	10.0	21.0	19.7
<i>Potamogeton</i>	<i>crispus</i>	Curly-leaf pondweed	1.5	2.2	---
<i>Potamogeton</i>	<i>foliosus</i>	Leafy pondweed	11.3	---	0.2
<i>Potamogeton</i>	<i>richardsonii</i>	Clasping-leaf pondweed	1.1	0.6	0.5
<i>Potamogeton</i>	<i>zosteriformis</i>	Flat-stem pondweed	3.7	16.6	0.5
<i>Spirodela</i>	<i>polyrhiza</i>	Large duckweed	0.2	1.8	---
<i>Stuckenia</i>	<i>pectinata</i>	Sago pondweed	2.4	---	1.7
<i>Typha</i>	<i>angustifolia</i>	Narrow-leaved cattail	0*	---	---
<i>Vallisneria</i>	<i>americana</i>	Wild celery	0.2	1.0	3.9
<i>Wolffia</i>	<i>columbiana</i>	Common watermeal	---	---	0.2
<i>Zannichellia</i>	<i>palustris</i>	Horned pondweed	1.5	16.6	1.2
0* - Species was sampled visually only, statistical data was not produced.					
** - F.O.O. no longer calculated by WI DNR					

Appendix B – Aquatic Invasive Species

Wisconsin Invasive Species Laws

Inspect your boat, trailer and equipment.

Remove any attached aquatic plants or animals (before launching, after loading & before transporting on a public highway)

Never Move live fish away from a waterbody.* Fish out of water are not considered live. Transport on ice is legal and recommended.

Buy minnows from a Wisconsin bait dealer and use leftover minnows only under certain conditions. *

*You may take leftover minnows purchased from a Wisconsin bait dealer away from any state water and use them again on that same water. You may use leftover minnows on other waters only if no lake or river water, or other fish were added to their container. See fishingwisconsin.org for more information.

Minnows

You may take live minnows purchased from a Wisconsin bait dealer (which includes Wisconsin registered fish farms) away from a waterbody if any of the following three conditions are met:

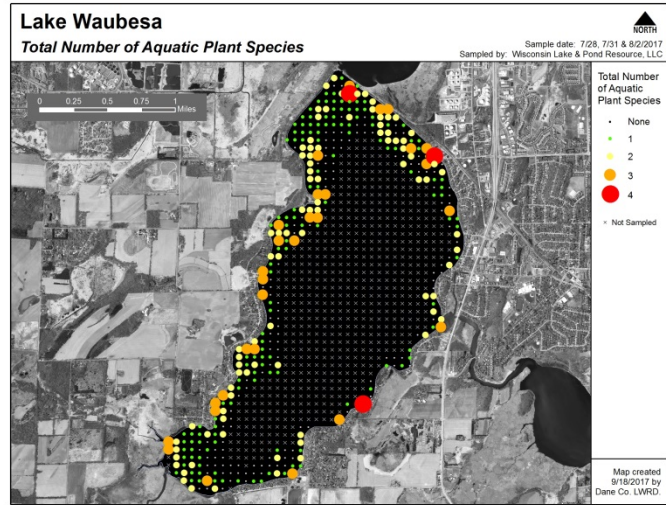
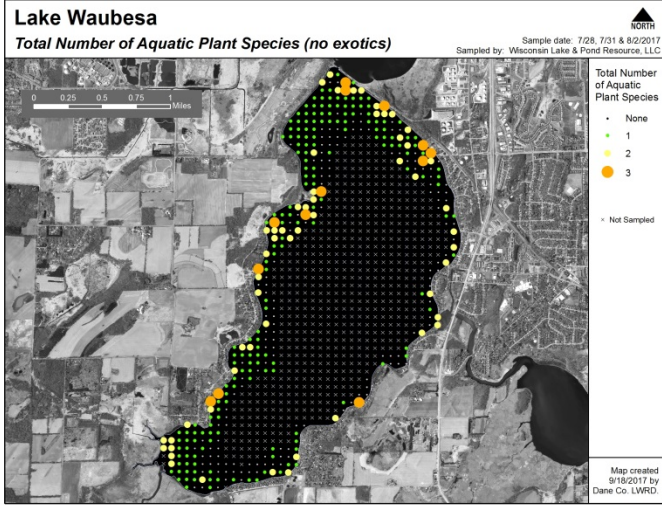
- Anglers can take purchased minnows away from a lake and use them again on that same waterbody.
- Anglers can also take purchased minnows away from a waterbody and use them elsewhere if no lake or river water or other fish were added to the bait container.
- Anglers can also take purchased minnows away from a waterbody for use elsewhere if they intend to preserve them as dead bait using approved methods.

In each of these cases minnows may be transported in the amount of water needed to keep the minnows alive, up to 2 gallons. No other fish may be held in the minnow container.

Additional Dane County Prevention Steps

- Dane County staff will remove all vegetation, mud, and other debris that is accessible from the machines before moving them away from any waterbody. (Machines include boats, harvesters, barges, and elevators)
- Dane County staff will remove the machines from a waterbody for a minimum of five dry days before moving them to another waterbody.
- When it is not possible to wait for 5 days Dane County staff will use a 2% Virkon solution mixed no more than seven days prior to application and allowing 10 minutes of contact time before rinsing with hot water to disinfect the machines before moving to another waterbody.
- Dane County staff will try to plan to move only downstream when working in the Yahara river chain as an added layer of protection
- Per Wisconsin DNR protocol found here: <http://dnr.wi.gov/topic/Invasives/disinfection.html>

Appendix C – Mapped Plant Distributions for Lake Waubesa



Filamentous algae not included in total species maps

