

APPENDIX A – LAKE KEGONSA PLANT STATISTICS

Table 1: 2011 Aquatic Plant Community Statistics, Lake Kegonsa, Dane County, WI

Aquatic Plant Community Statistics	2011
Number of sites sampled	655
Number of sites with vegetation	229
Number of sites shallower than maximum depth of plants	389
Frequency of occurrence at sites shallower than maximum depth of plants	58.87%
Simpson Diversity Index	0.84
Maximum Depth of Plants (Feet)	8
Taxonomic Richness (Number Taxa)	8
Average Number of Species per Site (less than max depth of plant growth)	0.83
Average Number of Species per Site (sites with vegetation)	1.41
Average Number of Native Species per Site (less than max depth of plant growth)	0.63
Average Number of Native Species per Site (sites with vegetation)	1.25

Table 2: 2011 Aquatic Plant Taxa-Specific Statistics, Lake Kegonsa, Dane County, WI

Species	Frequency of Occurrence within vegetated areas	Frequency of Occurrence at Site Shallower Than Max Depth of Plants	Percent Relative Frequency of Occurrence	Number of Intercept Points Where Detected	Average Density
Coontail	19.65	11.57	13.98	45	1.00
Water star-grass	5.68	3.34	4.04	13	1.08
Common waterweed	7.86	4.63	5.59	18	1.00
Eurasian watermilfoil	31.44	18.51	22.36	72	1.01
Curly-leaf pondweed	1.75	1.03	1.24	4	1.00
Flat-stem pondweed	13.10	7.71	9.32	30	1.00
Wild celery	11.79	6.94	8.39	27	1.37
Horned pondweed	49.34	29.05	35.09	113	1.00

Table 3: Historical and 2011 Floristic Quality Index, Lake Kegonsa, Dane County, WI

Genus	Species	Common Name	Coefficient of Conservatism			
			1990	1991	2006	2011
<i>Ceratophyllum</i>	<i>demersum</i>	Coontail	3	3	3	3
<i>Elodea</i>	<i>canadensis</i>	Common waterweed	---	---	3	3
<i>Heteranthera</i>	<i>dubia</i>	Water star-grass	---	6	6	6
<i>Lemna</i>	<i>minor</i>	Small duckweed	---	---	4	---
<i>Potamogeton</i>	<i>foliosus</i>	Leafy pondweed	---	---	6	---
<i>Potamogeton</i>	<i>richardsonii</i>	Clasping-leaf pondweed	---	---	5	---
<i>Potamogeton</i>	<i>zosteriformis</i>	Flat-stem pondweed	---	---	---	6
<i>Stuckenia</i>	<i>pectinata</i>	Sago pondweed	3	3	3	---
<i>Vallisneria</i>	<i>americana</i>	Wild celery	---	---	6	6
<i>Zannichellia</i>	<i>palustris</i>	Horned pondweed	---	---	7	7
Total Species			2	3	9	6
Mean C			3.00	4.00	4.78	5.17
Floristic Quality Index (FQI)			4.24	6.93	14.33	12.66

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 Kegonsa, Dane County, Wisconsin.

	1990	1991	2006	2011
F.o.o. at sites shallower than maximum depth of plants	---	---	45.48	58.87
Most Dominant Species	Eurasian Watermilfoil	Eurasian Watermilfoil	Eurasian Watermilfoil	Horned Pondweed
	Coontail	Coontail	Coontail	Eurasian Watermilfoil
	Sago Pondweed	Sago Pondweed	Sago Pondweed	Coontail
	Curly-leaf Pondweed	Curly-leaf Pondweed	Leafy Pondweed	Flat-stem Pondweed
	---	Water Stargrass	Filamentous Algae	Wild Celery
Maximum Depth of Plants	7.8	9.8	9	8
Species Richness	4	5	11	8
Community FQI	4.24	6.93	14.33	12.66
Average Coefficient of Conservatism	3.00	4.00	4.78	5.17

Genus	Species	Common Name	% Relative Frequency of Occurrence			
			1990	1991	2006	2011
<i>Algae</i>	<i>sp.</i>	Filamentous algae	---	---	8.7	---
<i>Ceratophyllum</i>	<i>demersum</i>	Coontail	5.4	9.5	19.5	14.0
<i>Elodea</i>	<i>canadensis</i>	Common waterweed	---	---	7.8	5.6
<i>Heteranthera</i>	<i>dubia</i>	Water star-grass	---	1*	8.1	4.0
<i>Lemna</i>	<i>minor</i>	Small duckweed	---	---	0**	---
<i>Myriophyllum</i>	<i>spicatum</i>	Eurasian watermilfoil	83.9	82.5	22.2	22.4
<i>Potamogeton</i>	<i>crispus</i>	Curly-leaf pondweed	2*	2*	---	1.2
<i>Potamogeton</i>	<i>foliosus</i>	Leafy pondweed	---	---	12.3	---
<i>Potamogeton</i>	<i>richardsonii</i>	Clasping-leaf pondweed	---	---	0.6	---
<i>Potamogeton</i>	<i>zosteriformis</i>	Flat-stem pondweed	---	---	---	9.3
<i>Stuckenia</i>	<i>pectinata</i>	Sago pondweed	6*	6*	14.7	---
<i>Vallisneria</i>	<i>americana</i>	Wild celery	---	---	1.8	8.4
<i>Zannichellia</i>	<i>palustris</i>	Horned pondweed	---	---	4.2	35.1
* - Data estimated from Figure 6, 2006 Lake Kegonsa Aquatic Plant Management Plan						
** - Species was sampled visually only, statistical data was not produced.						

APPENDIX B – LOWER MUD LAKE PLANT STATISTICS

Table 1: 2012 Aquatic Plant Community Statistics, Lower Mud Lake, Dane County, WI

Aquatic Plant Community Statistics	2012
Number of sites sampled	103
Number of sites with vegetation	97
Number of sites shallower than maximum depth of plants	103
Frequency of occurrence at sites shallower than maximum depth of plants	94.17%
Simpson Diversity Index	0.84
Maximum Depth of Plants (Feet)	3
Taxonomic Richness (Number Taxa)	10
Average Number of Species per Site (less than max depth of plant growth)	3.14
Average Number of Species per Site (sites with vegetation)	3.34
Average Number of Native Species per Site (less than max depth of plant growth)	2.23
Average Number of Native Species per Site (sites with vegetation)	2.99

Table 2: 2012 Aquatic Plant Taxa-Specific Statistics, Lower Mud Lake, Dane County, WI

Species	Frequency of Occurrence within vegetated areas	Frequency of Occurrence at Site Shallower Than Max Depth of Plants	Percent Relative Frequency of Occurrence	Number of Intercept Points Where Detected	Average Density
Filamentous algae	60.82	57.28	18.2	59	1.00
Coontail	90.72	85.44	27.2	88	2.00
Muskgrass	3.09	2.91	0.9	3	1.00
Common waterweed	4.12	3.88	1.2	4	1.00
Water star-grass	9.28	8.74	2.8	9	1.00
Small duckweed	55.67	52.43	16.7	54	1.00
Eurasian watermilfoil	35.05	33.01	10.5	34	1.00
Clasping-leaf pondweed	3.09	2.91	0.9	3	1.00
Wild celery	26.8	25.24	8.0	26	1.00
Common watermeal	45.36	42.72	13.6	44	1.00

Table 3: Historical and 2012 Floristic Quality Index, Lower Mud Lake, Dane County, WI

Genus	Species	Common Name	Coefficient of Conservatism	
			2006	2012
<i>Ceratophyllum</i>	<i>demersum</i>	Coontail	3	3
<i>Chara</i>	<i>sp.</i>	Muskgrass	7	7
<i>Elodea</i>	<i>canadensis</i>	Common waterweed	3	3
<i>Heteranthera</i>	<i>dubia</i>	Water star-grass	6	6
<i>Lemna</i>	<i>minor</i>	Small duckweed	4	4
<i>Lemna</i>	<i>trisulca</i>	Forked duckweed	6	---
<i>Nymphaea</i>	<i>odorata</i>	White water-lily	6	---
<i>Potamogeton</i>	<i>foliosus</i>	Leafy pondweed	6	---
<i>Potamogeton</i>	<i>pusillus</i>	Small pondweed	7	---
<i>Potamogeton</i>	<i>richardsonii</i>	Clasping-leaf pondweed	5	5
<i>Ranunculus</i>	<i>aquatilis</i>	Stiff water crowfoot	8	---
<i>Spirodela</i>	<i>polyrhiza</i>	Large duckweed	5	---
<i>Stuckenia</i>	<i>pectinata</i>	Sago pondweed	3	---
<i>Typha</i>	<i>sp.</i>	Cattail	1	---
<i>Vallisneria</i>	<i>americana</i>	Wild celery	6	6
<i>Wolffia</i>	<i>columbiana</i>	Common watermeal	5	5
Total Species			16	8
Mean C			5.06	4.88
Floristic Quality Index (FQI)			20.25	13.79

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, Lower Mud Lake, Dane County, Wisconsin.

	2006	2012
F.o.o. at sites shallower than maximum depth of plants	97.15	94.17
Most Dominant Species	Coontail Filamentous algae Sago pondweed Eurasian watermilfoil Small duckweed	Coontail Filamentous algae Small duckweed Common watermeal Eurasian watermilfoil
Maximum Depth of Plants	5	3
Species Richness	19	10
Community FQI	20.25	13.79
Average Coefficient of Conservatism	5.06	4.88

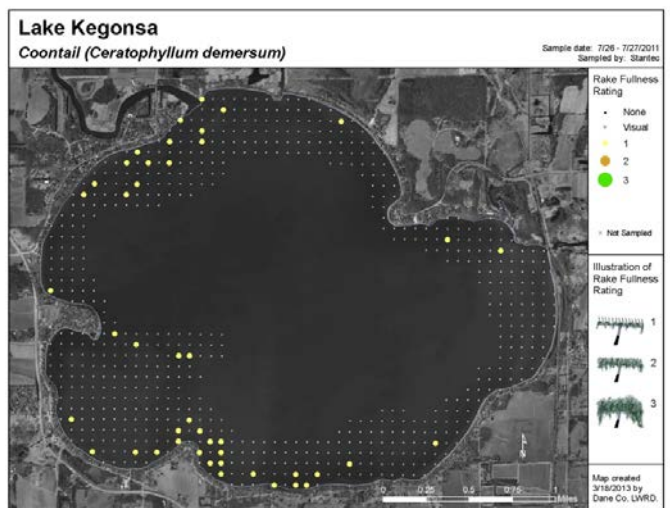
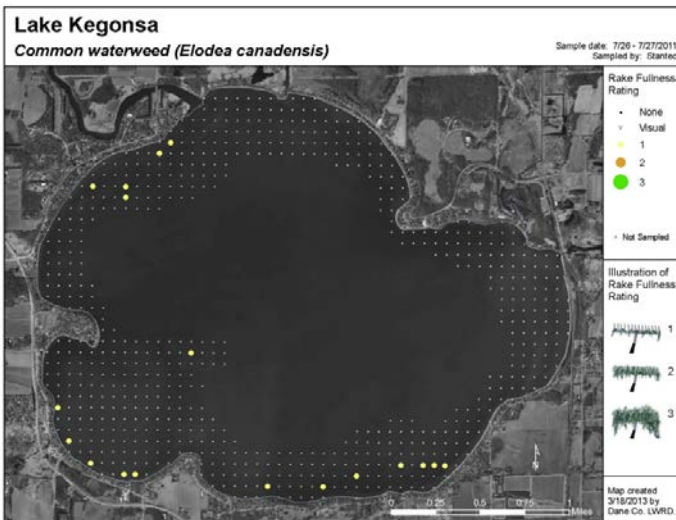
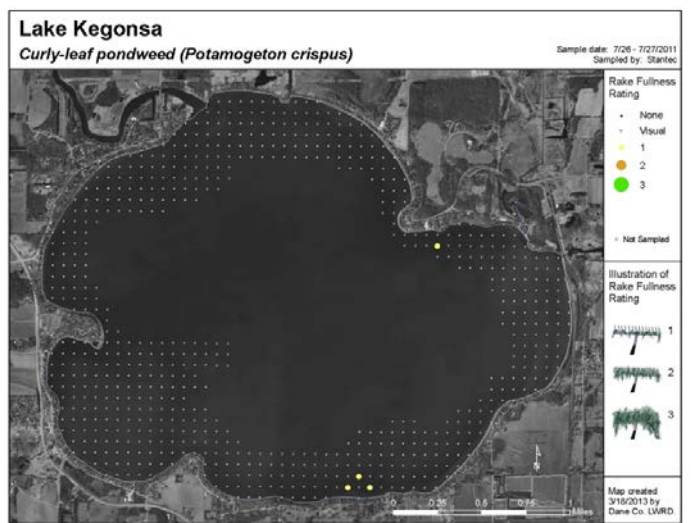
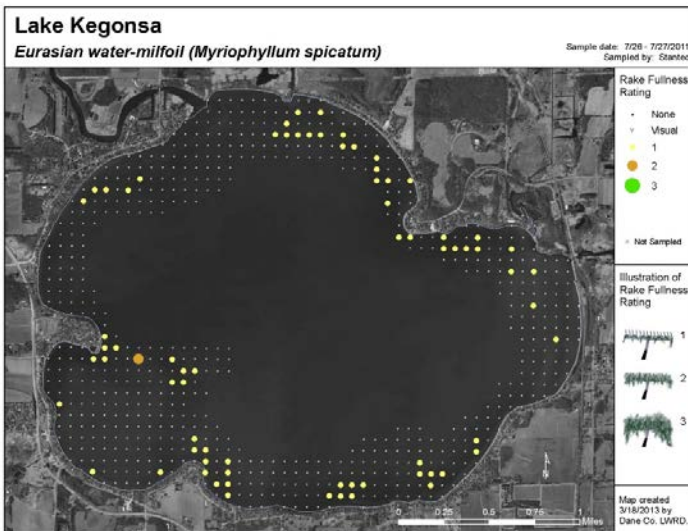
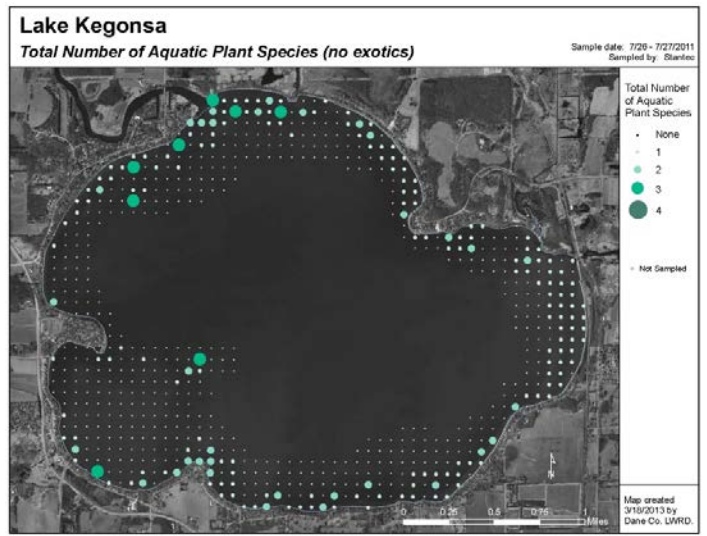
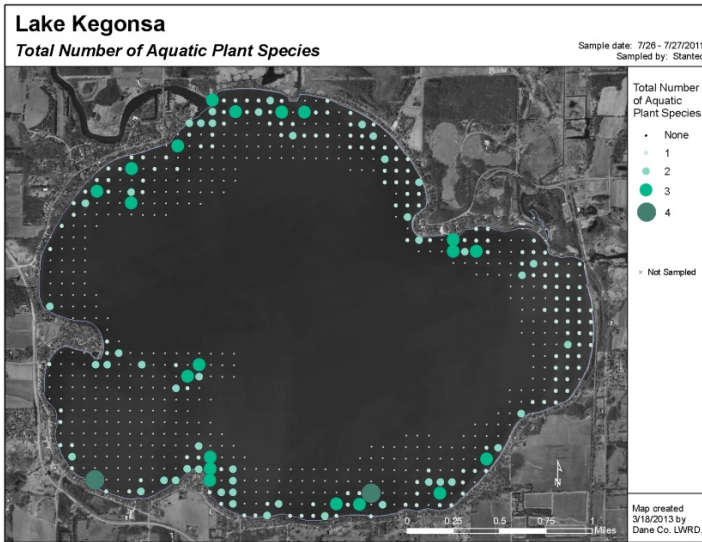
Table 5: Historical Aquatic Plant Occurrences, Lower Mud Lake, Wisconsin.

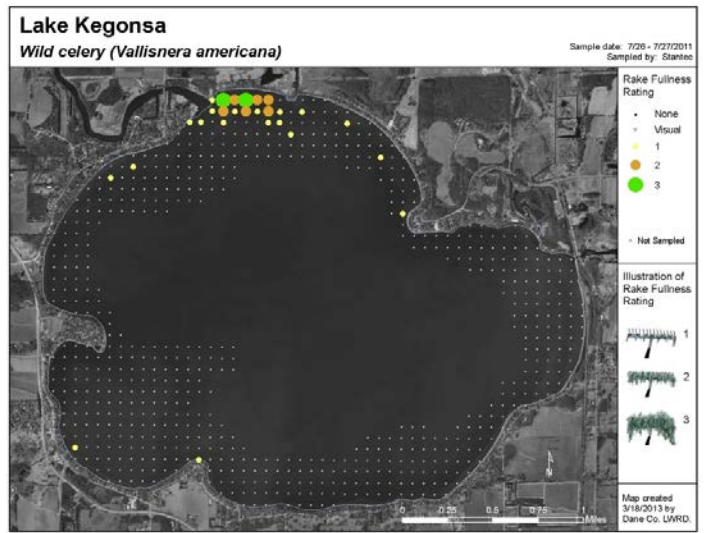
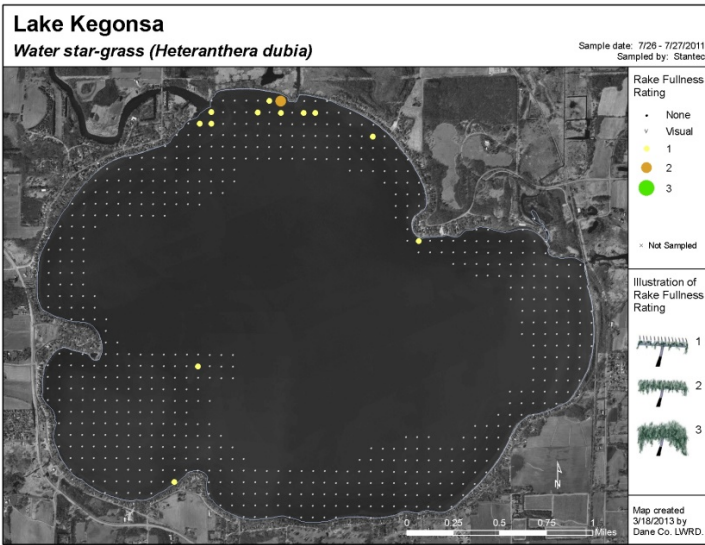
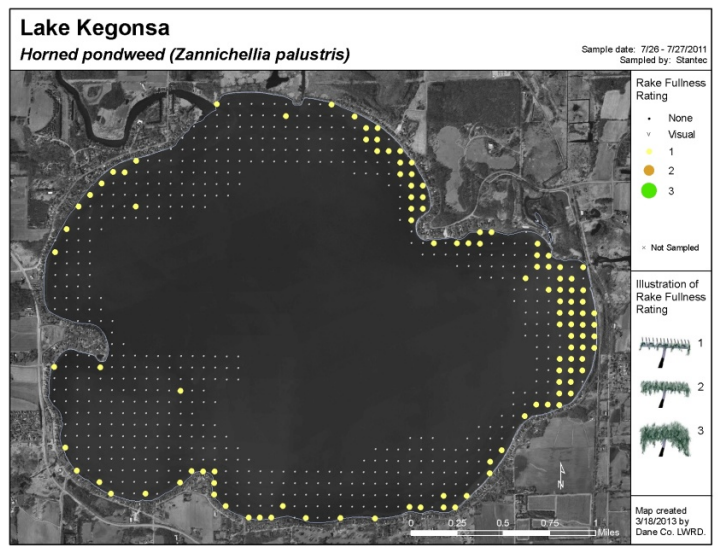
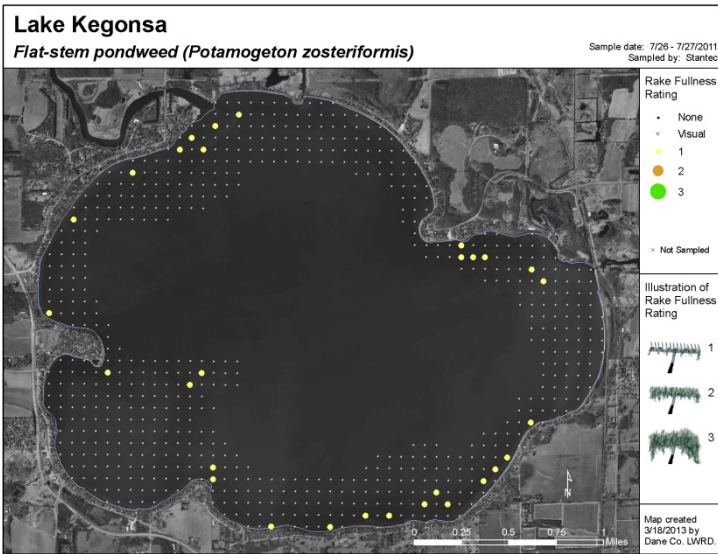
Genus	Species	Common Name	% Relative Frequency of Occurrence	
			2006	2012
<i>Algae</i>	<i>sp.</i>	Filamentous algae	16	18.2
<i>Ceratophyllum</i>	<i>demersum</i>	Coontail	30.5	27.2
<i>Chara</i>	<i>sp.</i>	Muskgrass	0.4	0.9
<i>Elodea</i>	<i>canadensis</i>	Common waterweed	2.2	1.2
<i>Heteranthera</i>	<i>dubia</i>	Water star-grass	5.0	2.8
<i>Lemna</i>	<i>minor</i>	Small duckweed	5.9	16.7
<i>Lemna</i>	<i>trisulca</i>	Forked duckweed	0*	---
<i>Myriophyllum</i>	<i>spicatum</i>	Eurasian watermilfoil	9.8	10.5
<i>Nymphaea</i>	<i>odorata</i>	White water-lily	1.2	---
<i>Potamogeton</i>	<i>crispus</i>	Curly-leaf pondweed	0.7	---
<i>Potamogeton</i>	<i>foliosus</i>	Leafy pondweed	5.6	---
<i>Potamogeton</i>	<i>pusillus</i>	Small pondweed	0*	---
<i>Potamogeton</i>	<i>richardsonii</i>	Clasping-leaf pondweed	2.4	0.9
<i>Ranunculus</i>	<i>aquatilis</i>	Stiff water crowfoot	0.4	---
<i>Spirodela</i>	<i>polyrhiza</i>	Large duckweed	0*	---
<i>Stuckenia</i>	<i>pectinata</i>	Sago pondweed	14.1	---
<i>Typha</i>	<i>sp.</i>	Cattail	0.3	---
<i>Vallisneria</i>	<i>americana</i>	Wild celery	5.5	8
<i>Wolffia</i>	<i>columbiana</i>	Common watermeal	0*	13.6

0* - Since species was only visually recorded, no stats were computed.

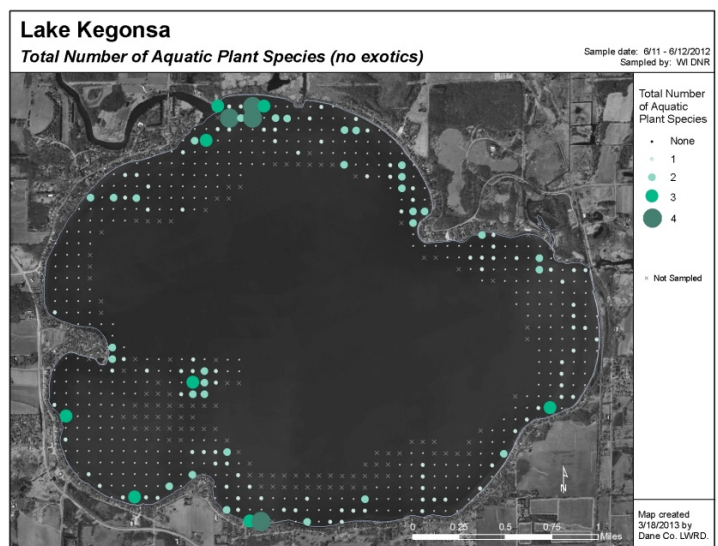
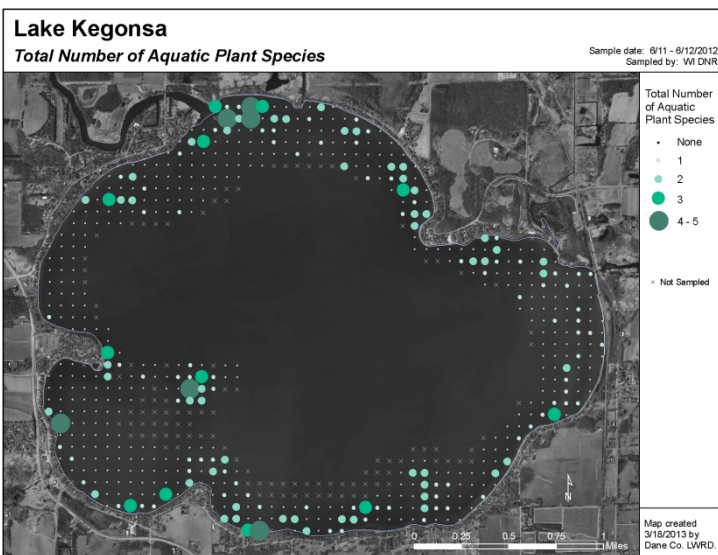
APPENDIX C – AQUATIC PLANT DISTRIBUTIONS

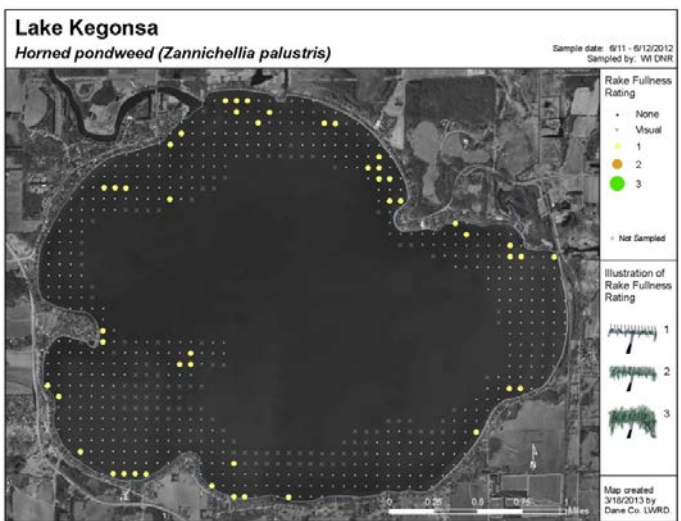
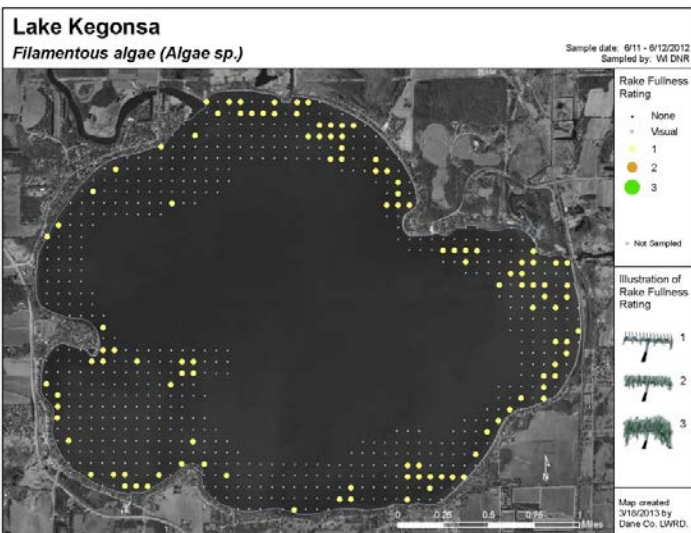
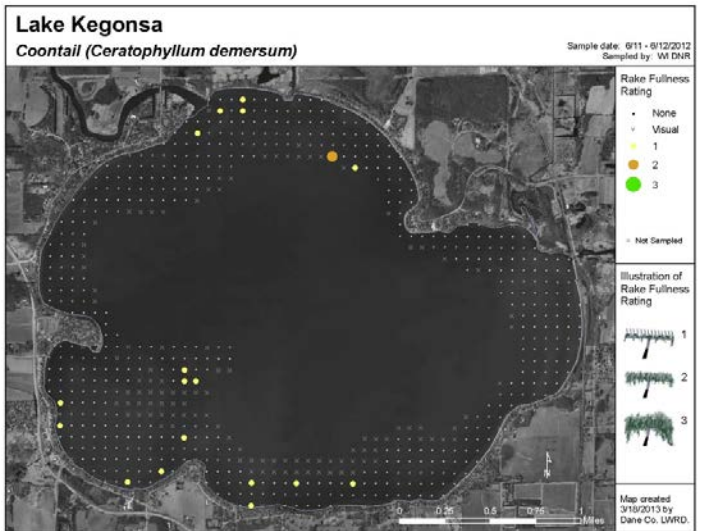
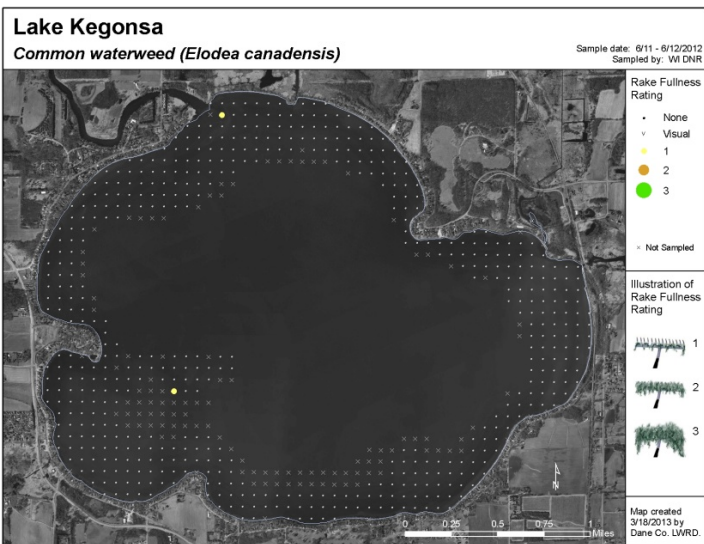
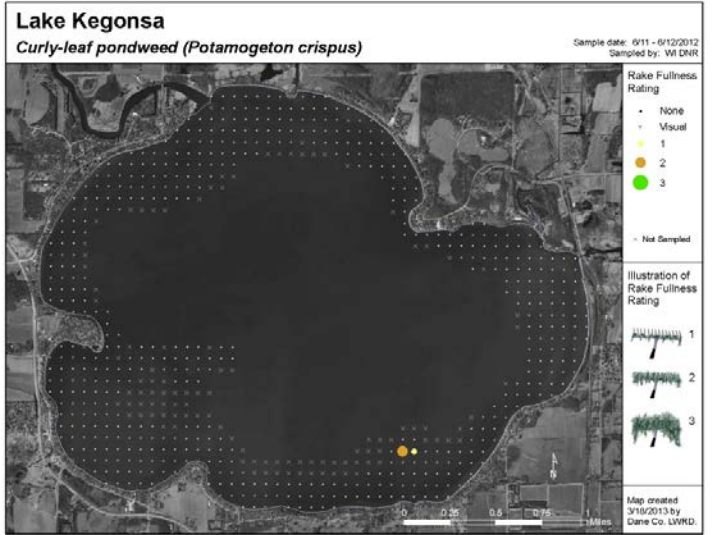
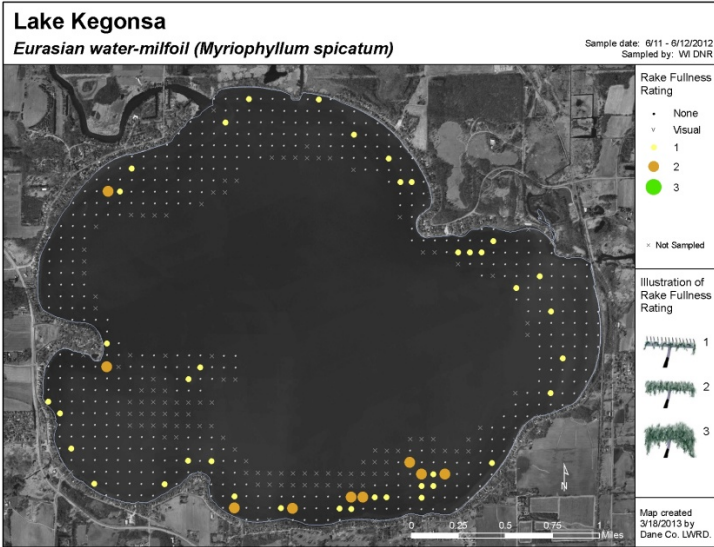
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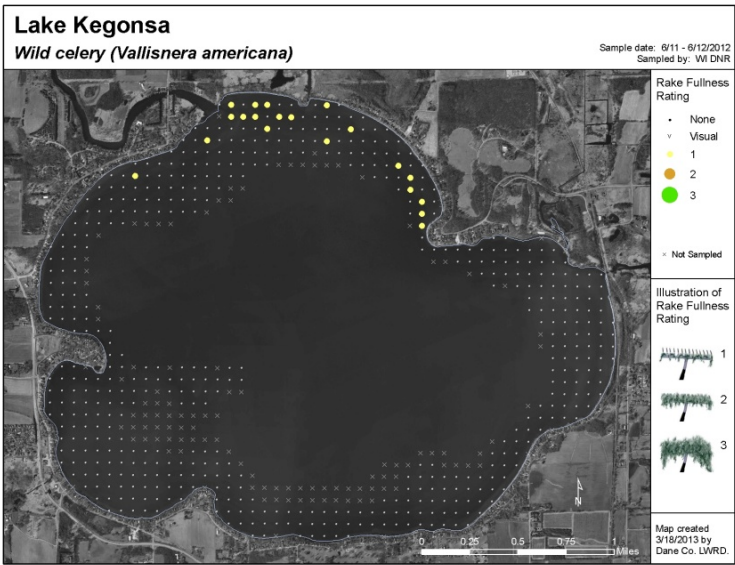
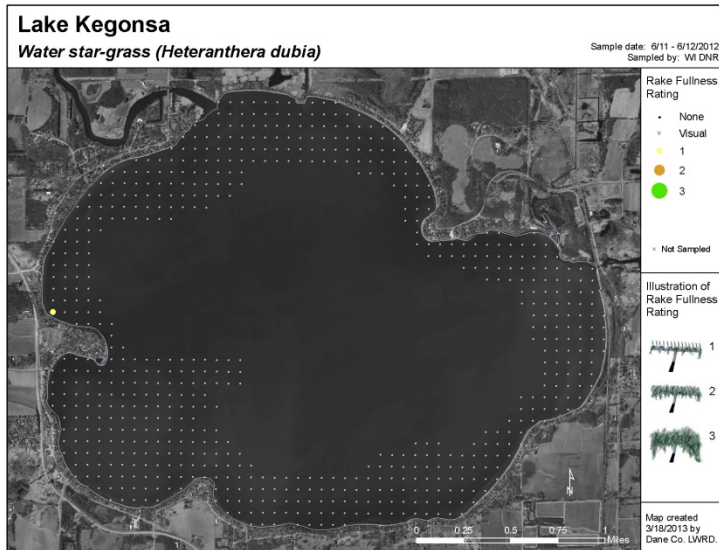
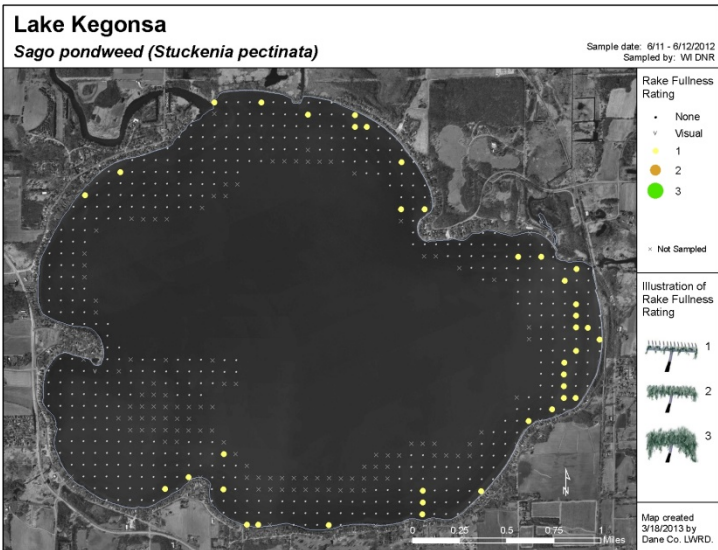
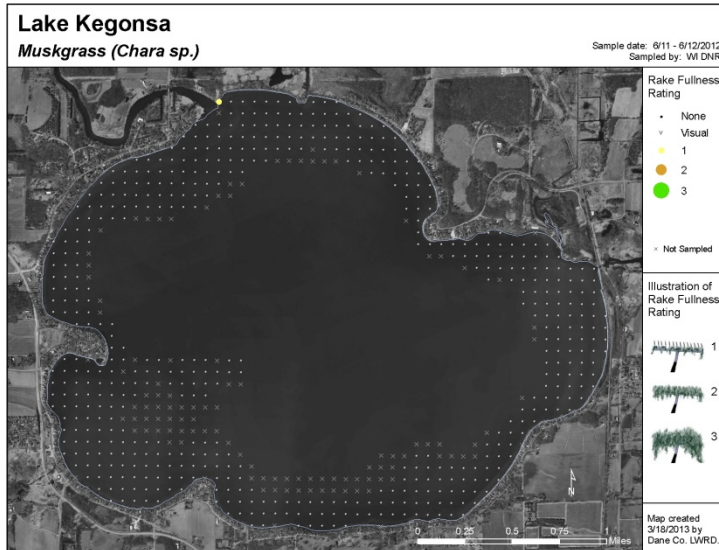
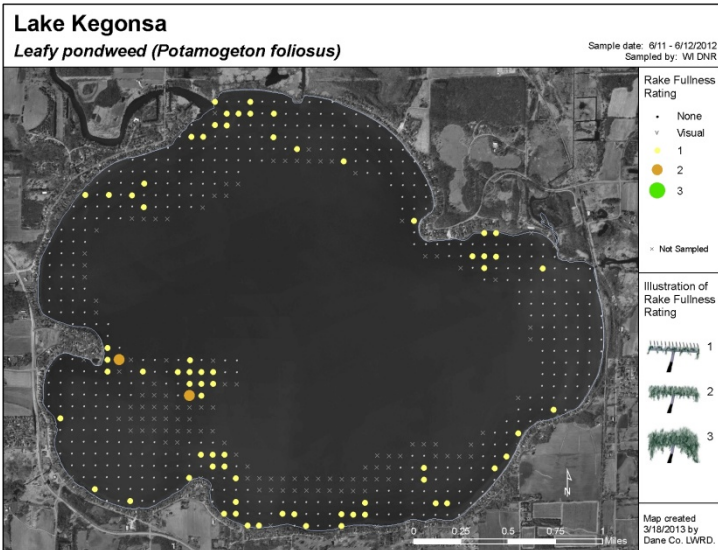




Kegonsa (2012)







Lower Mud (2012)

