Appendix A

COUNTY BOARD OF SUPERVISORS AQUATIC PLANT MANAGEMENT COMMITTEE FINAL REPORT
October 20, 2006

Resolution 94, 2005-06, established an Aquatic Plant Management Committee (Committee) of the County Board, charged with reviewing aquatic plant management options, including herbicides and mechanical harvesting for control of invasive and nuisance plants and overseeing preparation of aquatic plant management plans (required by DNR) to be in place before the 2007 harvesting season. The Committee began meeting in February 2006. Committee members are listed in Attachment 1. Generally speaking, the committee was very willing to explore ways that could reduce nuisance aquatic plants without hurting native plants and fish.

AQUATIC PLANTS IN DANE COUNTY WATERS

Large lake plants (called macrophytes) are an essential part of healthy lake and stream ecosystems. They are home to many aquatic animals and are cover for young fishes avoiding predators. These large plants also stabilize bottom sediments and reduce shoreline erosion. However, some plants, notably Eurasian water milfoil, are problem exotics, and degrade the recreational and aesthetic enjoyment of the lakes. Attachment 2 includes more information on aquatic plants in Dane County waters.

In the early 1960s, Eurasian water milfoil invaded the Yahara lakes and quickly became the most frequently found aquatic plant in those waters. By the mid-1960s, Eurasian water milfoil comprised almost 60% of the plant species found in Lake Mendota's University Bay. From 1990 through 2006, Eurasian water milfoil leveled off to between approximately 20-40% of the plant species in Lakes Mendota, Monona, Wingra and Waubesa. Although its presence is reduced, high density of milfoil still interferes with recreational uses.

Cotton candy-like filamentous algae, fueled by excessive nutrient loadings from the watershed and sediment, also result in dense areas or mats with the algae often entangled among the macrophytes. Harvesting operations have variable success in controlling these nuisance conditions that seriously impair recreational activities and aesthetic enjoyment.

The Yahara Lakes are fertile systems with abundant plant and algae growth including noxious scum-forming blue-green algae, some species of which can produce health-threatening toxins. The fertility of the lakes has been exacerbated by decades of human activity within the watershed. There may always be a perception by many individuals that there are "too many weeds" regardless if they are native plants or exotic nuisance species. For this reason, public education regarding natural lake conditions and realistic outcomes is a necessary component of any lake management program.

COMMITTEE ACCOMPLISHMENTS

The Committee reviewed and discussed aquatic plant management options:

- Current aquatic plant management activities within the County (attachment 3)
- Other management options for aquatic plants (attachment 4)
  - Use of herbicides to control plants – whole lake treatments
  - Use of herbicides to control plants – partial lake treatments
  - Use of other techniques (biological control) to control plants
  - Drawdown of water
  - Dredging
  - Alum treatment

The Committee gathered information from:

- DNR fish and lake managers
- DNR aquatic plant management staff
- DNR researchers
- Corps of Engineers (COE) Research and Development Center, Environmental Laboratory personnel
- Herbicide industry representatives
- Minnesota DNR staff working on plants and weevils
- County harvesting operational staff
- UW faculty and staff

After extensive evaluation and discussion, the committee developed answers to the 13 questions posed by the Dane County Board in Resolution 94, 05-06 (see attachment 5).

WHOLE LAKE HERBICIDE TREATMENT USING FLURIDONE

In 2005, the media reported about a whole-lake treatment of Houghton Lake in Michigan using the herbicide fluridone (marketed as "Sonar" and "Avast"), and several local citizens proposed to use this herbicide on the Yahara chain of lakes.

After receiving input from several lake experts regarding the problems with fluridone use in the Yahara lakes, the Committee agreed at its May 17, 2006 meeting that whole lake treatment with fluridone is not appropriate. The principal reason that fluridone use is not applicable to these lakes is the flow-through nature of the system, with a narrow littoral (plant growth) zone, which is not conducive to the long chemical contact time associated with fluridone use. Three independent researchers from DNR, UW and the U.S. Army Corps of Engineers supported this position. In addition, citizens who initially supported the use of fluridone and participated in the Committee's meetings with technical experts have publicly agreed with the Committee's findings and are interested in pursuing other approaches to plant management.

CURRENT AND FUTURE MANAGEMENT OPTIONS

Private Property

- Private-property owners can submit applications to obtain a DNR permit (ch. NR 107, Wis. Adm.Code) to use herbicide to treat aquatic plants around their piers.
- Private-property owners can hand remove a certain amount of plants without a permit (as specified under ch. NR 109.06 (2), Wis. Adm. Code), or if a larger area is desired, submit an application to DNR under conditions further specified under ch. NR 109.

Mechanical Harvesting

- Dane County, under supervision of the Parks Division, operates eight mechanical harvesters on waters where DNR has permitted harvesting operations. The County's policy is to cut and harvest Eurasian water milfoil and other invasives to provide for reasonable use of the lakes for boating, fishing and swimming, while preserving the health and balance of the lake ecosystem.
- Staff are exploring use of GPS systems on plant harvesters to:
  - Track harvester locations; providing information to public and staff.
  - Create record of where harvesting has occurred.
  - Download information to County website.
  - Identify and record location of Eurasian water milfoil and other exotics.
  - Prioritize cutting, track decline or expansion of exotics and provide historical record.
  - Identify and record location of native plants that can also be used to track loss, expansion, and identify trends.
  - Show harvester operators their current location to assist with cutting when turbidity or wind creates conditions that decrease water clarity.
  - Identify location of obstructions to prevent equipment damage.
- Staff are seeking assistance from the University of Wisconsin (Agricultural Engineering and Center for Limnology) on harvester modifications that will improve collection of plants and algae.

RECOMMENDATIONS TO DANE COUNTY BOARD AND COUNTY EXECUTIVE

HIGH-PRIORITY RECOMMENDATIONS

Additional Expenditures for Existing Harvesting Program

- ***Provide funding to allow the hiring of an Aquatic Plant Specialist – LTE***. This Aquatic Plant Specialist would work for County Parks from April through the summer harvesting season. The responsibilities of this position could include:
  - Survey (early season and ongoing) aquatic plant growth in the lakes in order to adjust maps used to direct harvesting operations.

- recommend priority harvest areas along with native plant areas that should be protected.
- respond to complaints and coordinate with other agencies (i.e. DNR and municipalities.
- continually integrate the GPS capabilities within the harvesting program to ensure that maps are accurate, taking into account the seasonal changes inherent with aquatic plant communities.

One long-term advantage of hiring this LTE would be to have someone in the field who is knowledgeable about aquatic plants and responsible for making recommendations to the Parks Director and Harvester Supervisor, who would then make operational decisions about where and when to harvest.

It may be difficult to find an individual with these kinds of skills who is willing to work seasonally. If the County supports this position, staff could approach DNR to see if this position could be shared. This could broaden the potential candidate list and make the total package more appealing to an individual, while benefiting both Dane County and DNR. Another option would be for the County to contract seasonally with an aquatic plant consultant.

- ***Support expansion of global positioning system (GPS) and geographic information system (GIS) technology use in the harvesting program to better control exotic plants while restoring or protecting native plants.*** GPS will greatly improve understanding of plant conditions and location, harvest efficiency, communication to the public, documentation of loads harvested by location, and priority setting. The section of this document titled Mechanical Harvesting describes some of the intended uses of GPS.

New Initiatives

- ***Evaluate early-season mechanical harvesting that would allow county staff to begin cutting in April or early May to aid in suppressing nuisance conditions by cutting when plant mass is less and stressed by over-winter conditions.*** The intent is to increase efficiency and meet harvesting goals earlier in the season; possibly reducing complaints. This will involve use of interim staff to operate harvesters until summer staff (primarily students or teachers) are available. Interim staff are usually available in late May to early June. DNR South Central Region fisheries staff agree that this could be done without disturbing fisheries and spawning.

- ***Support a research project with the U.S. Army Corps of Engineers (COE), DNR, UW and others to evaluate early-season use of herbicides for aquatic plant nuisance control and restoration of native plants.*** Recent studies being conducted by the U.S. Army Corps of Engineers in Minnesota, as well as several projects permitted in Wisconsin, have demonstrated the potential effectiveness of using aquatic herbicides in innovative ways to control Eurasian water milfoil at larger scales and minimize the impacts on native species. The key elements of the technique are:

  - Applying the herbicide early in the growing season before native plants are present, milfoil is just emerging, and water temperatures are cold enough to maintain adequate levels of oxygen when the plants die off.

- Using lower doses of chemicals and optimizing contact time with target species; and
- Repeating the treatment over several years in order to reduce the re-growth of milfoil in the treated areas.

Assessing the effect of early season herbicide treatments on aquatic plant communities is relatively straightforward from a scientific standpoint, requiring accurate chemical application and accurate monitoring of the plant community. However, potential herbicide interactions with other substances, fisheries and other ecological effects, and potential long-term and cumulative chemical effects are unknown and difficult to evaluate in the natural environment. Ideally, these factors should be considered in designing a research project, but practically, may be cost-prohibitive to evaluate in the field. If the research project is pursued, the County and other research partners must balance information gained with environmental risk when outlining specific research objectives (plant assessments only or additional studies).

Citizen support and County Board and County Executive approval would be necessary for the County to proceed with seeking financial support to conduct this research on the Yahara Lakes. We recommend that before research planning begins, the Dane County Lakes and Watershed Commission hold public meetings to inform the public of the potential research project, and if it is successful in demonstrating short-term success, the possible expanded use of early-season herbicide use in the Yahara Lakes. These meetings would be an important opportunity for the public to provide input on the advisability of the research and its potential long-term implications, before the County decides whether or not to proceed.

The following is a tentative research schedule prepared by DNR. There may be grant monies available to help cost-share the project. In addition, the COE has expressed a strong interest in being involved.

- Fall/Winter 2006-07 – Identify potential test lakes/areas/sites based on recent aquatic plant surveys and historical information.
- Spring/Summer 2007 – Baseline aquatic plant surveys in sites of interest and lake-wide if needed.
- Spring 2008-10 – Experimental treatments (following pre-treatment plant survey).
- Summer 2008-10 – Post treatment plant surveys.

At the end of the research project, there would need to be a benefit/cost analysis, and evaluation of potential herbicide use along with other possible management methods.

Ensuring Recommendation Implementation

- ***The Lakes and Watershed Commission should establish a standing Aquatic Plant Management (APM) Subcommittee.*** This subcommittee would be responsible for monitoring and providing oversight and insight related to aquatic plant issues and harvesting activities, and keeping up with new and emerging aquatic plant management techniques. The County Board's Aquatic Plant Management Committee formed by Resolution 94, 2005-06 would then be dissolved since oversight would be within the Lakes and Watershed Commission. The Lakes and Watershed Commission's APM

Subcommittee could seek input from a technical advisory group, and may require additional staffing resources to accomplish its work.

Among the Subcommittee's responsibilities should be:

- ***Evaluate non-herbicide methods of aquatic plant control, including biological pathogens or insects.*** Although present options seem limited, future research may provide new management approaches. Aquatic plant management programs should be flexible enough to incorporate new technology.

- ***Develop and communicate realistic expectations for the outcome of mechanical, chemical and biological plant management activities.*** Eurasian water milfoil has been in the Yahara Lakes for over 40 years and it is not realistic to think that it can be eradicated. While we should always be seeking new approaches to restore the aquatic plant composition to a more natural condition, we need to recognize that aquatic plant habitat is crucial to sustain a healthy fishery, and remain vigilant that we carry out this mission in a way that avoids doing more harm than good.

- ***Analyze what the harvesting program can accomplish with existing equipment and staffing levels.*** This will allow the County Board and County Executive or other decision-makers to make informed decisions about potential changes needed to harvesting equipment and staffing levels.

- ***Advise on adjustments needed to harvesting program priorities, equipment and staffing due to environmental factors.*** For example, infestation by zebra mussels would likely result in clearer water (because zebra mussels are filter feeders and remove planktonic (free floating) algae from the water). This would likely result in improved light penetration, which may allow rooted aquatic plants (including undesirable invasive plants like Eurasian water milfoil and curly leaf pondweed) to grow in deeper water and/or at higher densities.

ADDITIONAL PRIORITIES

- ***The County should consider how control strategies meld with long-term restoration goals.*** Similar to the Lake Mendota Priority Watershed Project, finding solutions to aquatic plant problems should include long-term restoration as a major component of planning and funding. Aquatic plant management issues are only one component of an overall scientifically-supported, multi-tool lake protection and restoration strategy. As described in one of the other recommendations, the Lakes and Watershed Commission should be responsible for this coordination.

- ***Assist efforts to educate shoreline property owners in natural lake shoreland area conditions.*** Property owners should be made aware of available techniques and resources for managing aquatic plants within their riparian management zone, and realistic outcomes of various management techniques. Applied in conjunction with other recommendations, a program to involve shoreline property owners in APM activities could have a significant beneficial effect on near shore waters.

- ***Seek DNR funding to update the Aquatic Plant Management Plans prepared in 1993 for Lakes Monona and Waubesa.***

- ***Support development of a new program with additional equipment and staff as necessary to clean up floating plants in shallow areas inaccessible to harvesters along public and private shorelines.*** This could be a pilot program with a goal of developing opportunities for private entrepreneurs to provide service, and may involve riparians paying a fee to a public or private service provider. A pilot demonstration program may be an ideal way to encourage individual action and see who is willing to take advantage of this opportunity. The County, using dedicated barges, may partner with the various jurisdictions and private enterprises to assist lake property owners in clean-up.

IMPORTANT EXISTING EFFORTS THAT SHOULD CONTINUE

- ***Continue coordination of aquatic plant harvesting activities under the control and direction of the Dane County Parks Division of the Land and Water Resources Department.*** The Parks Division's approach to program coordination and management is to work with many parties in development of a harvesting program that meets the needs of a broad base of residents and recreational users and at the same time is protective of the resource. Parks has done an excellent job in coordinating aquatic plant harvesting and management activities.

- ***Continue Take a Stake in the Lakes annual pier pickup of aquatic plants during the Dane County Lakes and Watershed Commission's Yahara Lakes Week in June.***

- ***Support the continuing efforts to look at new or existing technology as a way to manage, control and improve operations.*** This would include evaluating a wide range of plant management exotics control options including new ways to apply herbicides (low dosage, type and timing), different ways to harvest plants (deep cuts, selective cuts) and possible use of pathogens or insects.

ATTACHMENTS

1. Committee Roster
2. "Aquatic Plants in Dane County Waters" (Lakes and Watershed Commission 2003 publication, available at: http://www.danewaters.com/pdf/20030811_aquatic_lake_mgmt.pdf)
3. Current Aquatic Plant Management Activities in Dane County
4. DNR table "Management Options for Aquatic Plants"
5. Answers to Questions from the Aquatic Plant Management Committee's Charge

[NOTE: This Committee Report and all attachments are available at www.danewaters.com/management/AquaticPlantManagement.aspx]

Appendix B

PROTECT YOUR WATERS

General Prevention Procedures for Stopping Aquatic Hitchhikers: A must read for all recreational users

Follow a general set of procedures every time you come in contact with any body of water. By doing so, you can protect your waters from harmful aquatic hitchhikers. Because you never know where a nuisance species has been introduced, but has yet to be discovered.

There are hundreds of different harmful species ranging from plants, fish, amphibians, crustaceans, mollusks, diseases or pathogens. Some organisms are so small, you may not even realize they are hitching a ride with you. So, it is important to follow this general procedure every time you leave any body of water.

Remove all visible mud, plants, fish/animals

- Before leaving any body of water, it is important to examine all your equipment, boats, trailers, clothing, boots, buckets etc and: Remove any visible plants, fish or animals
- Remove mud and dirt since it too may contain a hitchhiker*
- Remove even plant fragments as they may contain a hitchhiker*
- Do not transport any potential hitchhiker, even back to your home. Remove and leave them at the site you visited

*The larvae (immature form) of an animal can be so tiny that you cannot see it. However, it can live in mud, dirt, sand, and on plant fragments.

Eliminate water from all equipment before transporting anywhere

Much of the recreational equipment used in water contains many spots where water can collect and potentially harbor these aquatic hitchhikers. Thus, make sure that you:

- Eliminate all water from every conceivable item before you leave the area you are visiting
- Remove water from motors, jet drives, live wells, boat hulls, scuba tanks and regulators, boots, waders, bait buckets, seaplane floats, swimming floats
- Once water is eliminated, follow the cleaning instructions listed below

Clean and dry anything that came in contact with the water

Basic procedures for boats, trailers, equipment, dogs, boots, clothing, etc., include:

- Use hot (< 40° C or 104° F) or salt water to clean your equipment
- Wash your dog with water as warm as possible and brush its coat

The following recipes are recommended for cleaning hard-to-treat equipment that cannot be exposed to hot water:

- Dipping equipment into 100% vinegar for 20 minutes will kill harmful aquatic hitchhiker species.
- A 1 % table salt solution for 24 hours can replace the vinegar dip.

This table provides correct mixtures for the 1 % salt solution in water:

Gallons of Water	Cups of Salt
5	2/3
10	1 ¼
25	3
50	6 ¼
100	12 2/3

If hot water is not available, spray equipment such as boats, motors, trailers, anchors, decoys, floats, nets, **with high-pressure water.**

DRY Equipment. If possible, allow for 5 days of drying time before entering new waters.

Do not release or put plants, fish or animals into a body of water unless they came out of that body of water

Also, do not release them into storm drains, because most storm drains lead to water bodies or wetlands. This is an important prevention step because many plants and animals can survive even when they appear to be dead. The two categories below describe some common situations where people may feel compelled to release aquatic plants or animals.

Aquarium and Aquatic Pets: If your family gets tired of its aquarium or aquatic pets, do not release anything from the aquarium (water, plants, fish or animals) into or near a body of water or storm drain. Explain to your children how you could be hurting all of the streams and lakes around the country and killing other fish and animals that already live in the water.

If you cannot find a home for the critters in you aquarium, bury them. Dump the water into the toilet or yard, far away from storm drains.

Bait: Whether you have obtained bait at a store or from another body of water, do not release unused bait into the waters you are fishing. If you do not plan to use the bait in the future, dump the bait in a trashcan or on the land, far enough away from the water that it cannot impact this resource. Also, be aware of any bait regulations, because in some waters, it is illegal to use live bait.

Source: Aquatic Nuisance Species Task Force website (www.protectourwaters.org/prevention/prevention_generic.php)

Appendix C

Lake Kegonsa summary statistics:

Total number of points sampled	435
Total number of sites with vegetation	156
Total number of sites shallower than maximum depth of plants	343
Frequency of occurrence at sites shallower than maximum depth of plants	45.48
Maximum depth of plants (ft)	9.00
Number of sites sampled using rake on Rope (R)	0
Number of sites sampled using rake on Pole (P)	433
Average number of all species per site (shallower than max depth)	
Average number of all species per site (veg. sites only)	2.13
Average number of native species per site (shallower than max depth)	0.67
Average number of native species per site (veg. sites only)	1.96
Species Richness	10
Species Richness (including visuals)	11

Lake Kegonsa Plant Survey Data Summary

Species	Frequency Occurrence %	Relative Frequency %	Sites Found	Rake Fullness
EWM	47.4	22.2	74	1
Fil. algae	18.6	8.7	29	1
Coontail	41.7	19.5	65	1
Elodea	16.7	7.8	26	1
Water stargrass	17.3	8.1	27	1
Leafy pondweed	26.3	12.3	41	1
Clasping-leaf pondweed	1.3	0.6	2	2
Sago pondweed	31.4	14.7	49	1
Wild celery	3.9	1.8	6	2
Horned pondweed	9	4.2	14	1

Lower Mud Lake summary statistics:

Total number of points sampled	246
Total number of sites with vegetation	239
Total number of sites shallower than maximum depth of plants	246
Frequency of occurrence at sites shallower than maximum depth of plants	97.15
Maximum depth of plants (ft)	5.00
Number of sites sampled using rake on Rope (R)	0
Number of sites sampled using rake on Pole (P)	246
Average number of all species per site (shallower than max depth)	2.83
Average number of all species per site (veg. sites only)	2.91
Average number of native species per site (shallower than max depth)	2.08
Average number of native species per site (veg. sites only)	2.60
Species Richness	15
Species Richness (including visuals)	19

Lower Mud Lake Plant Survey Data Summary

Species	Frequency Occurrence %	Relative Frequency %	Sites Found	Rake Fullness
EWM	**28.5**	**9.8**	**68**	**1**
CPL	**2.1**	**0.7**	**5**	**1**
Fil. algae	**46.4**	**16**	**111**	**2**
Coontail	**88.7**	**30.5**	**212**	**2**
Chara	**1.3**	**0.4**	**3**	**1**
Elodea	**6.3**	**2.2**	**15**	**1**
Water stargrass	**14.6**	**5**	**35**	**1**
Small duckweed	**17.2**	**5.9**	**41**	**1**
White water lily	**3.4**	**1.2**	**8**	**2**
Leafy pondweed	**16.3**	**5.6**	**39**	**1**
Clasping-leaf pondweed	**7.1**	**2.4**	**17**	**2**
Sago pondweed	**41**	**14.1**	**98**	**1**
Wild celery	**15.9**	**5.5**	**38**	**2**
Cattail	**0.8**	**0.3**	**3**	
Ranunculus	**1.3**	**0.4**	**3**	**1**

Also observed were forked duckweed, watermeal and Spirodela.

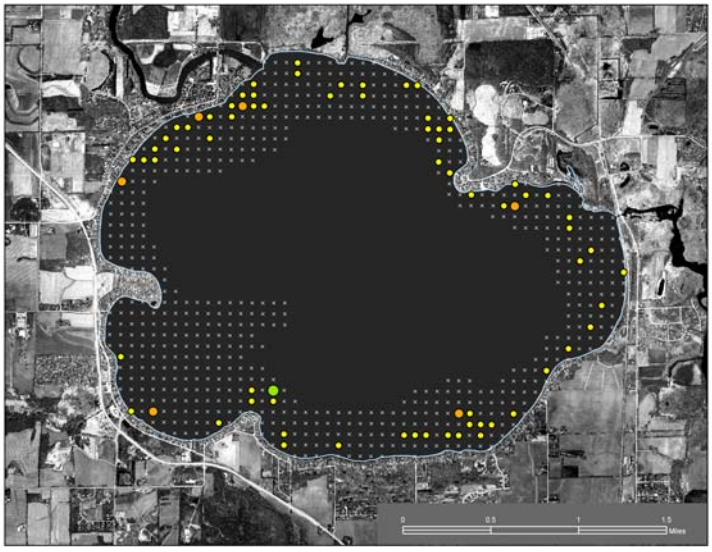
Appendix D: 2006 Lake Kegonsa Aquatic Plant

Individual Plant Species Amounts

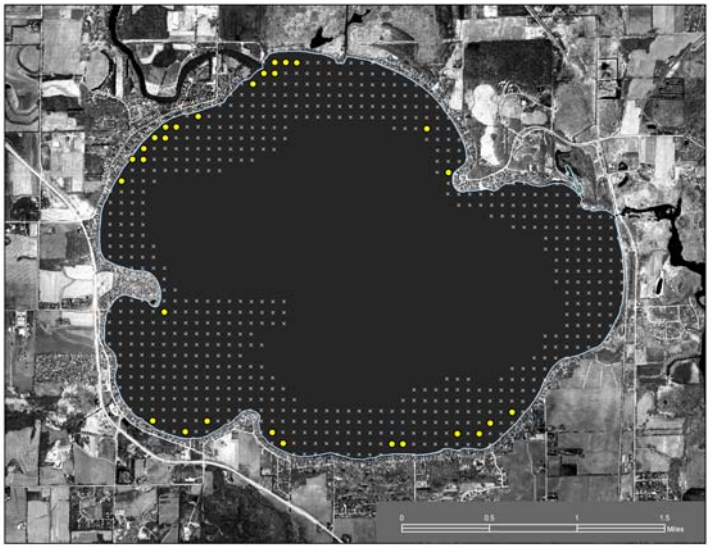
Amount Found / Rake
- overflowing, can't see top of rake head
- rake head ~1/2 full, between 1 & 2
- few plants on rake head
- × nothing found

perimeter of sampling points (provided by WDNR)

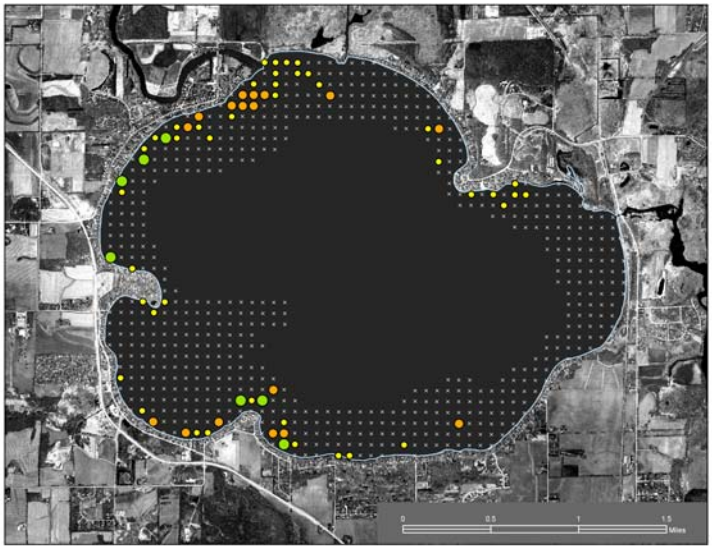
D1. Eurasian Water-milfoil



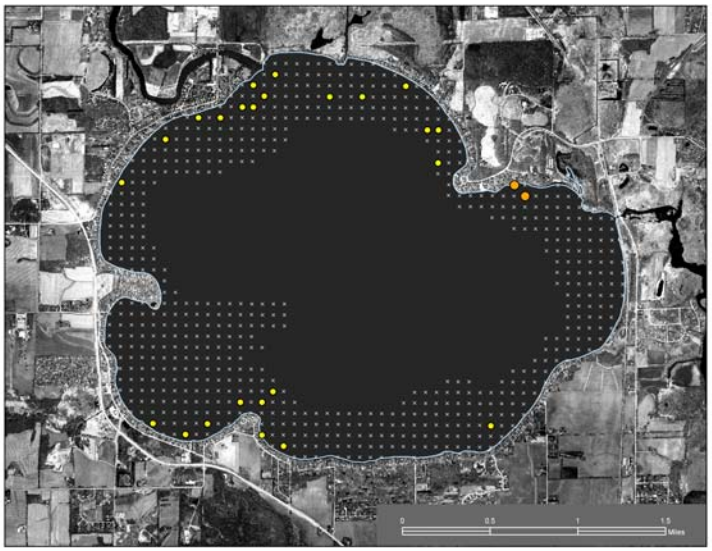
D2. Filamentous Algae



D3. Coontail



D4. Common Waterweed



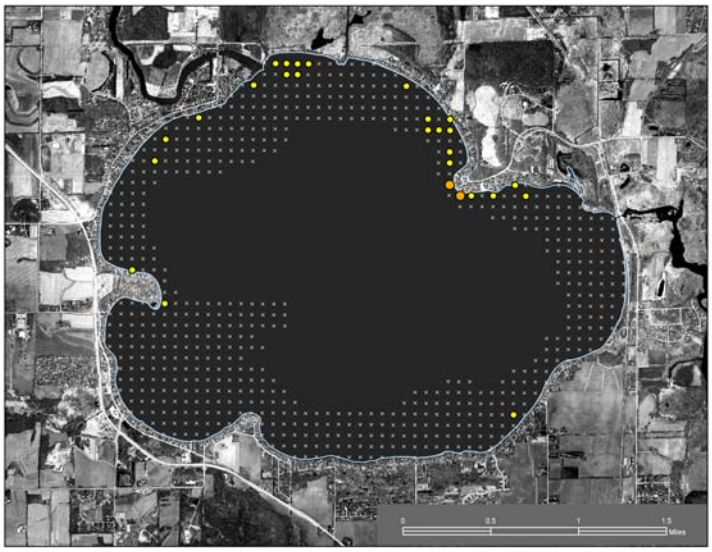
Appendix D: 2006 Lake Kegonsa Aquatic Plant Distributions

Individual Plant Species Amounts

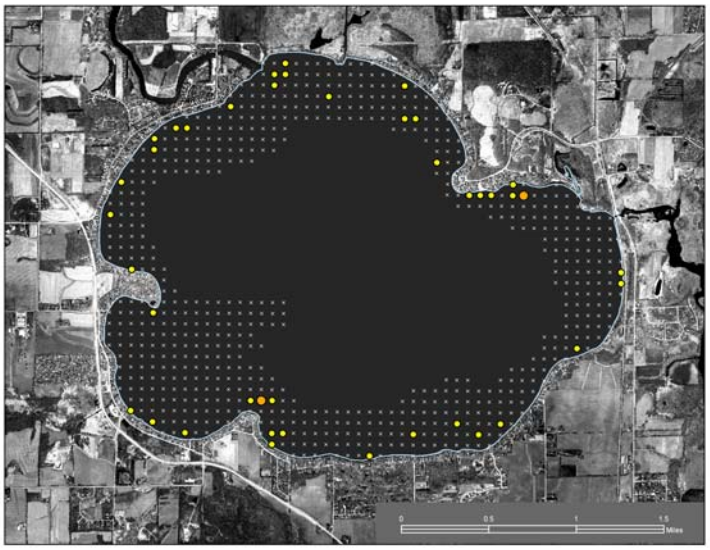
Amount Found / Rake
- overflowing, can't see top of rake head
- rake head ~1/2 full, between 1 & 2
- few plants on rake head
- × nothing found

perimeter of sampling points (provided by WDNR)

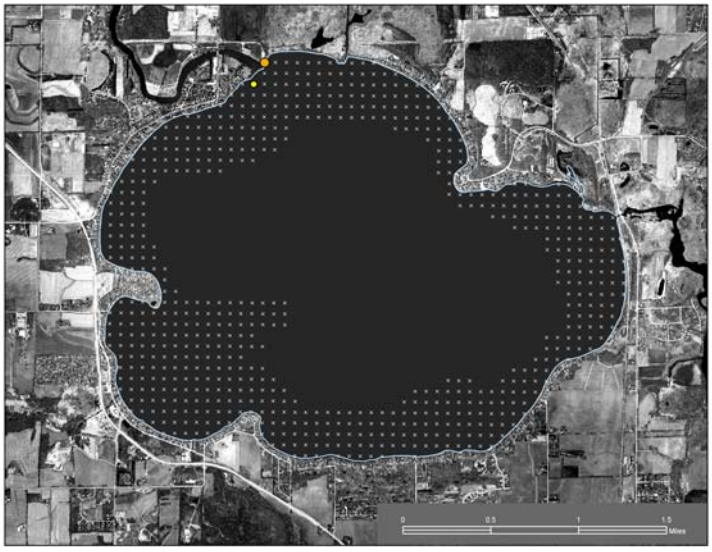
D5. Water Star-grass



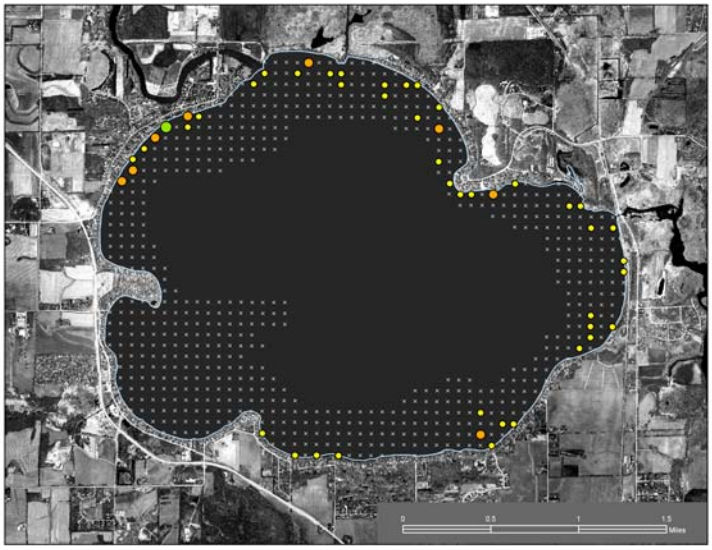
D6. Leafy Pondweed



D7. Clasping-leaf Pondweed



D8. Sago Pondweed



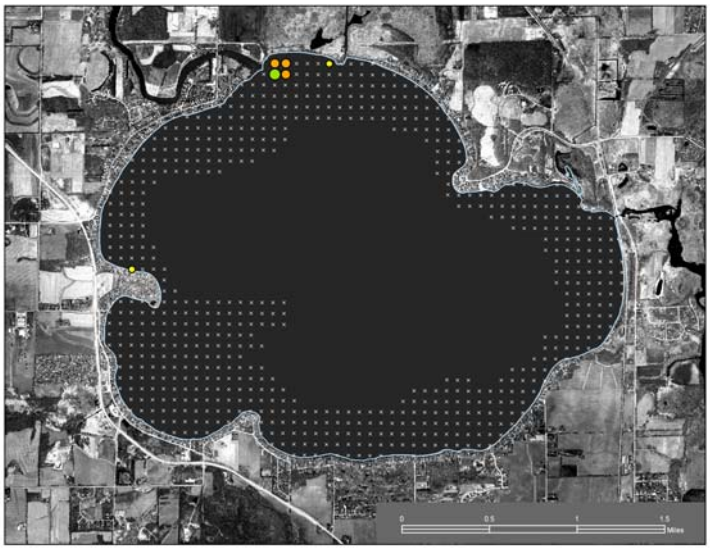
Appendix D: 2006 Lake Kegonsa Aquatic Plant Distributions

Individual Plant Species Amounts

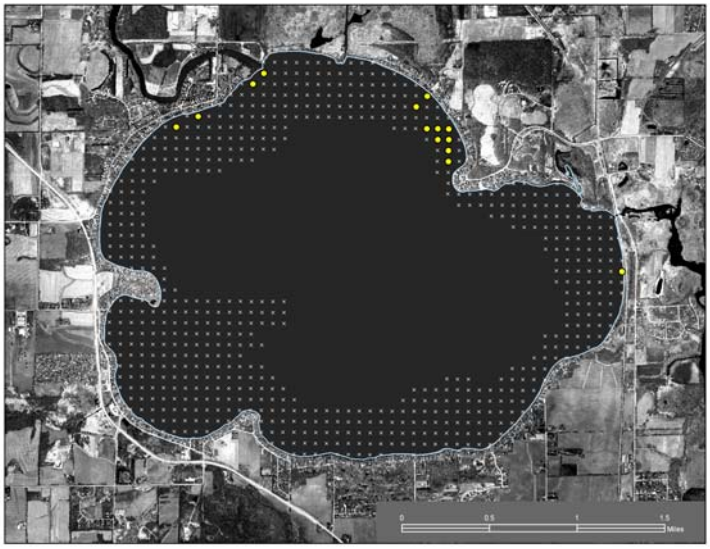
Amount Found / Rake
- overflowing, can't see top of rake head
- rake head ~1/2 full, between 1 & 2
- few plants on rake head
- × nothing found

perimeter of sampling points (provided by WDNR)

D9. Wild Celery



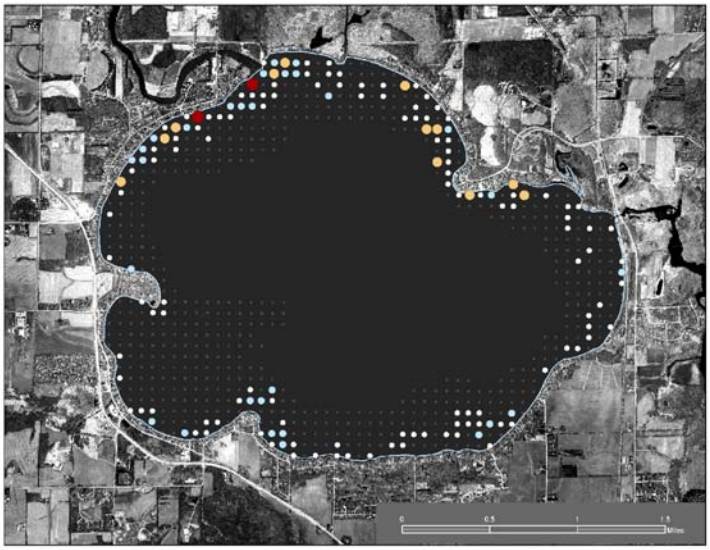
D10. Horned Pondweed



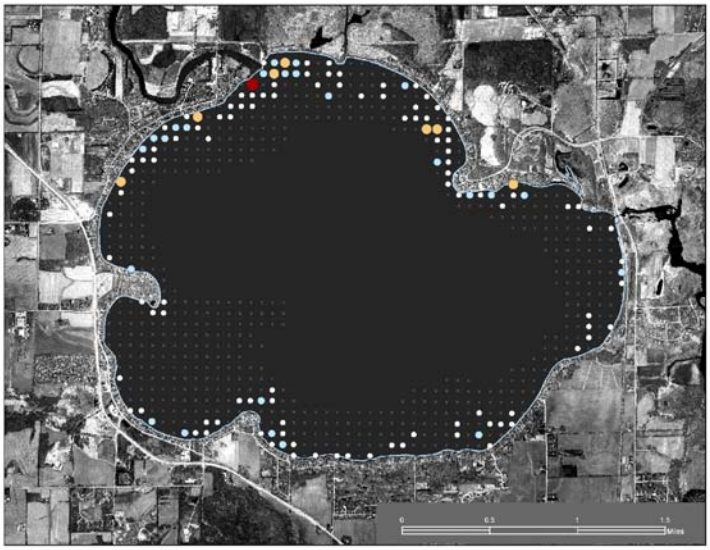
Total Number of Plant Species

Number of Species
- 4
- 3
- 2
- 1
- × 0

D11. Total Number of Species (includes exotics)



D12. Total Number of Species (no exotics)



Appendix E

Fish and Waterfowl Values of Desirable Native Plants in Lake Kegonsa and Lower Mud Lake

Scientific Name	Common Name	Fish	Wildlife
Ceratophyllum demersum	Coontail	Food and cover	Food
Chara	Stonewort or Muskgrass	Food and cover	Food
Elodea canadensis	Elodea	Food and cover	Food
Heteranthera dubia	Water stargrass	Food and cover	Food
Lemna minor	Lesser Duckweed	Food and cover	Food
Lemna trisulca	Forked Duckweed	Food and cover	Food
Nymphaea odorata	White Water Lily	Food and cover	Food
Potamogetan foliosus	Leafy Pondweed	Food and cover	Food
Potamogetan richardsonii	Clasping-leaf Pondweed	Food and cover	Food
Ranunculus	Water Crowfoot	Food and cover	Food
Spirodela polyhiza	Great Duckweed	Food and cover	Food
Struckenia pectinatus	Sago Pondweed	Food and cover	Food
Vallisneria americana	Wild celery	Food and cover	Food
Wolffia columbiana	Common Watermeal	Food	Food
Zannichelia palustris	Horned Pondweed	Food	Food

Fish and Wildlife Values based on Borman et al. 1997, Nichols and Vennie 1991 and Janecek 1988.

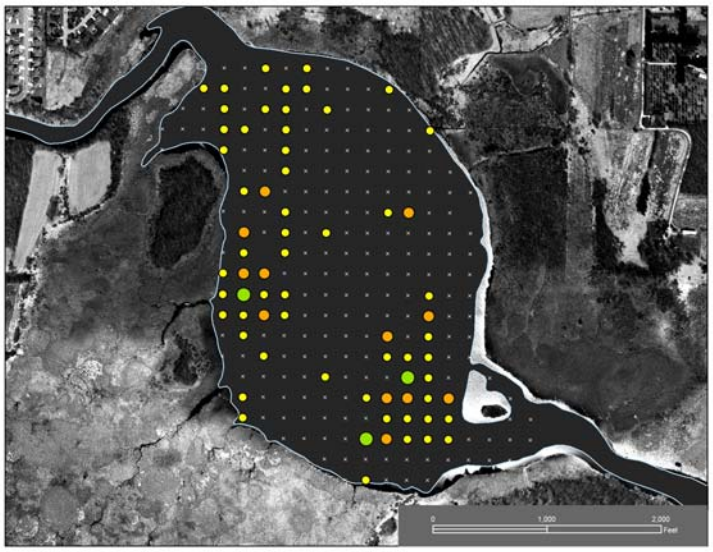
Appendix F: 2006 Mud Lake Aquatic Plant Distributions

Individual Plant Species Amounts

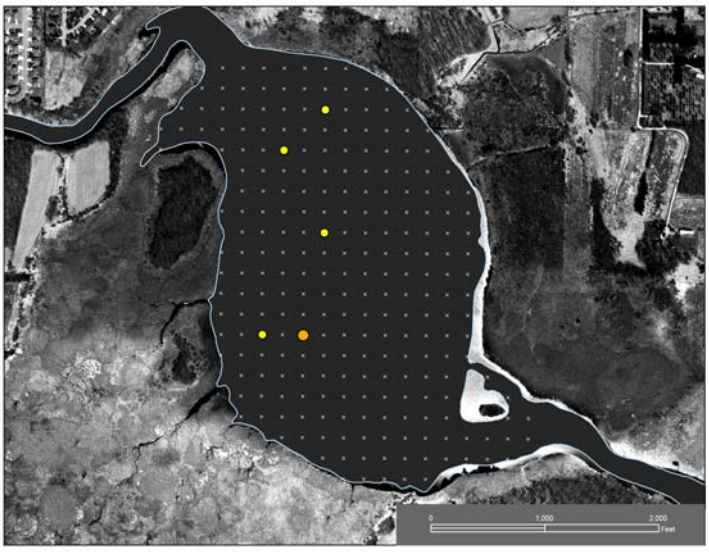
Amount Found / Rake
- overflowing, can't see top of rake head
- rake head ~1/2 full, between 1 & 2
- few plants on rake head
- × nothing found

perimeter of sampling points (provided by WDNR)

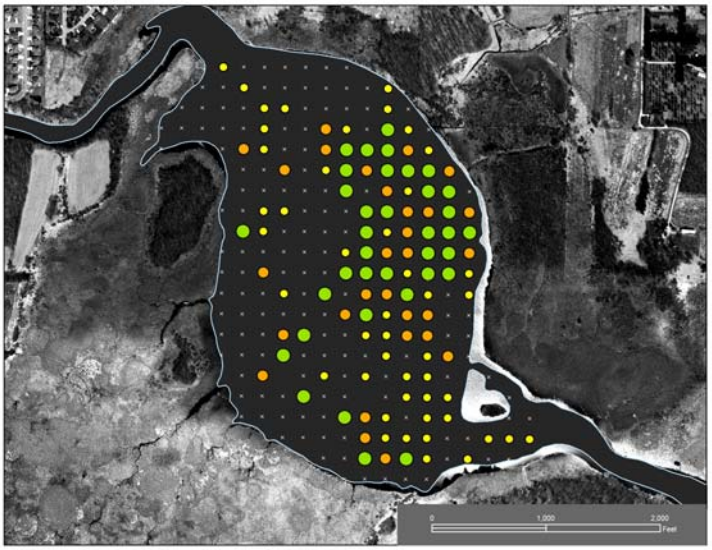
F1. Eurasian Water-milfoil



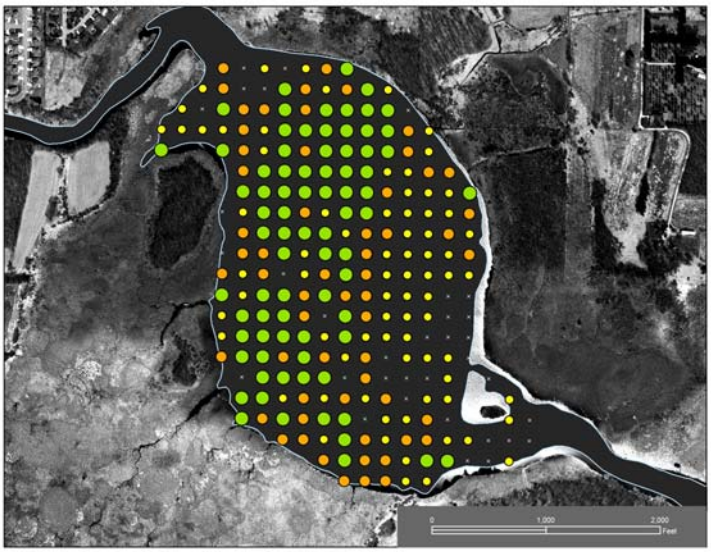
F2. Curly-leaf Pondweed



F3. Filamentous Algae



F4. Coontail



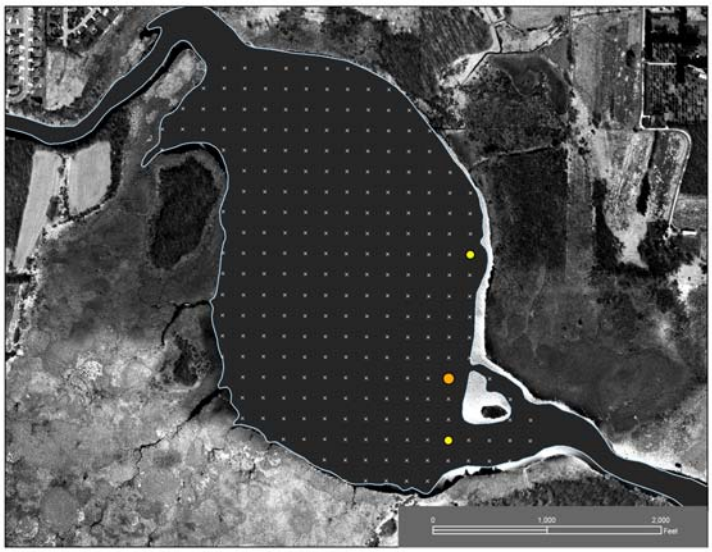
Appendix F: 2006 Mud Lake Aquatic Plant Distributions

Individual Plant Species Amounts

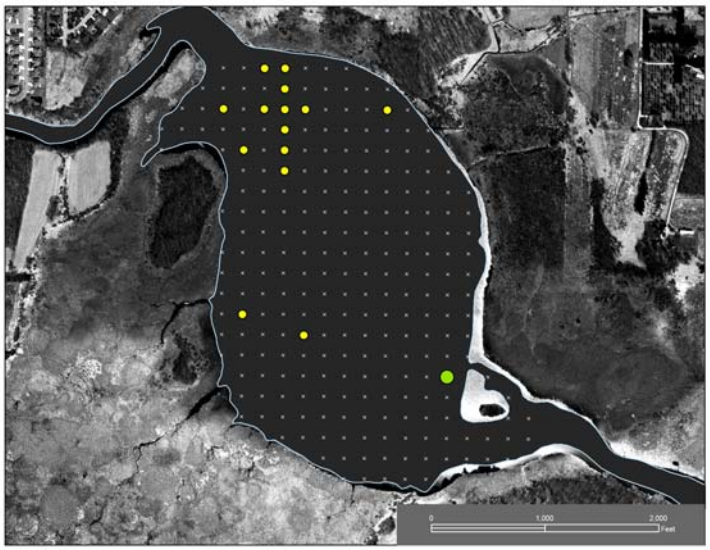
Amount Found / Rake
- overflowing, can't see top of rake head
- rake head ~1/2 full, between 1 & 2
- few plants on rake head
- × nothing found

perimeter of sampling points (provided by WDNR)

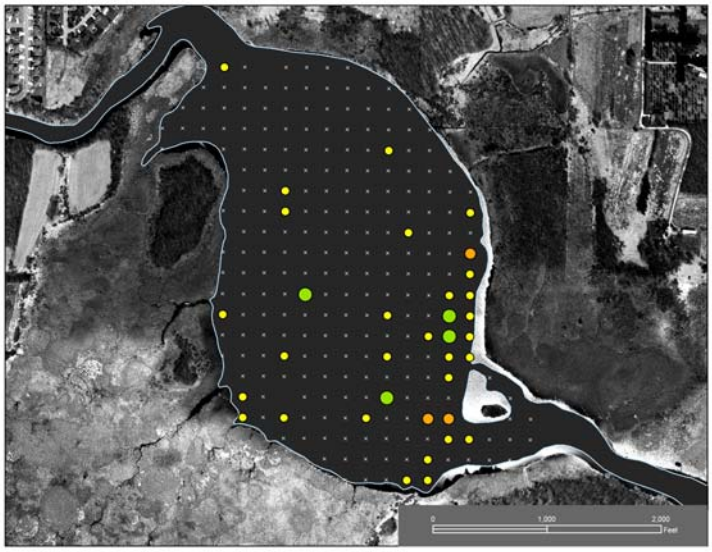
F5. Muskgrasses



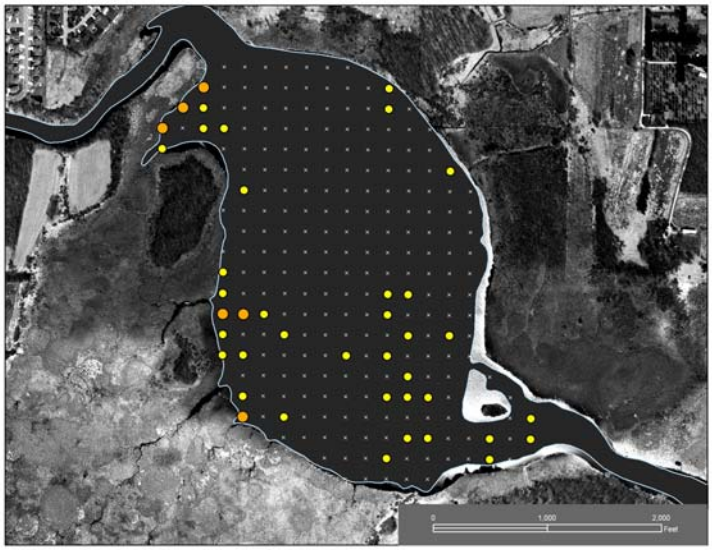
F6. Common Waterweed



F7. Water Star-grass



F8. Small Duckweed



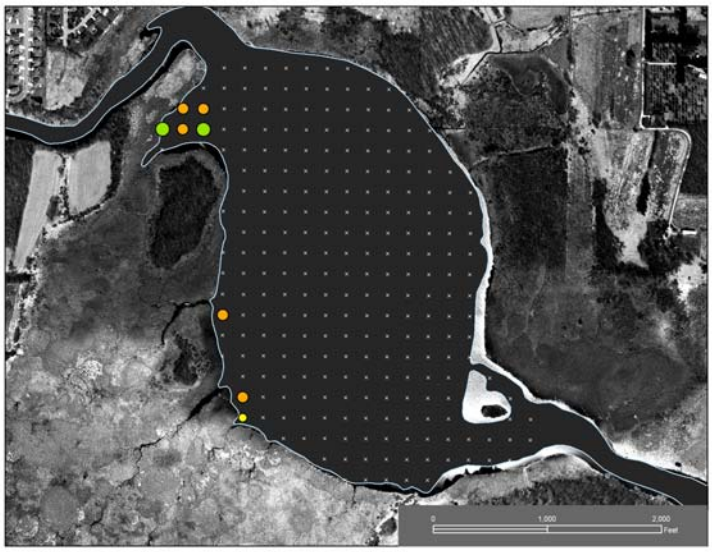
Appendix F: 2006 Mud Lake Aquatic Plant Distributions

Individual Plant Species Amounts

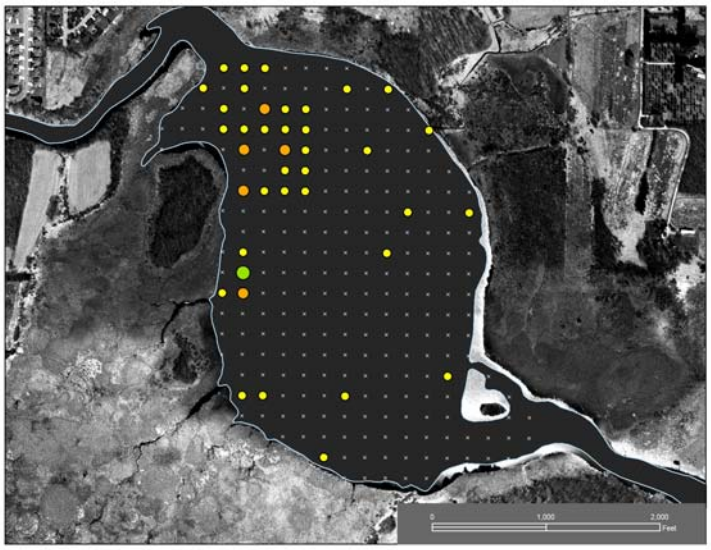
Amount Found / Rake
- overflowing, can't see top of rake head
- rake head ~1/2 full, between 1 & 2
- few plants on rake head
- × nothing found

perimeter of sampling points (provided by WDNR)

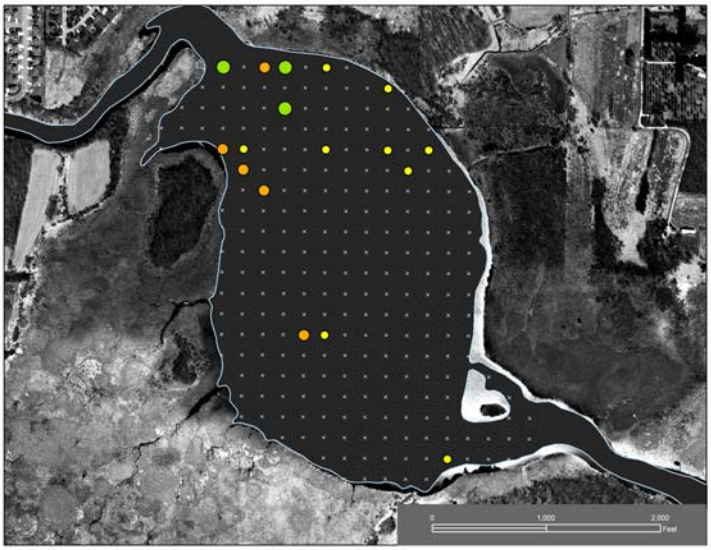
F9. White Water Lily



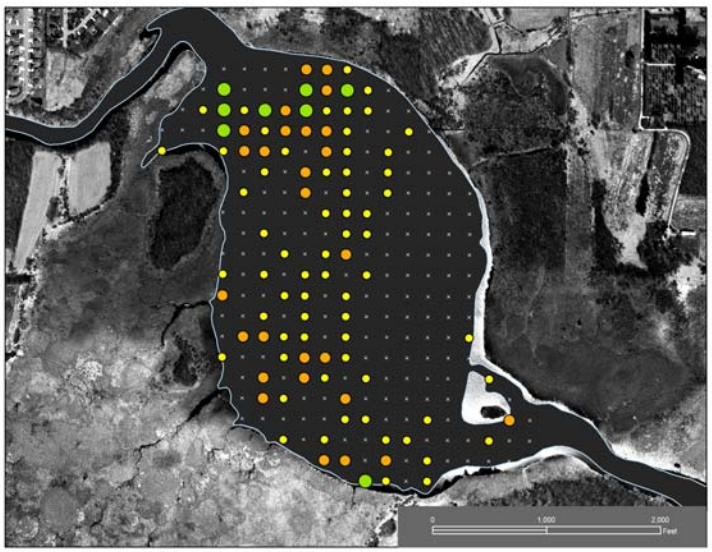
F10. Leafy Pondweed



F11. Clasping-leaf Pondweed



F12. Sago Pondweed



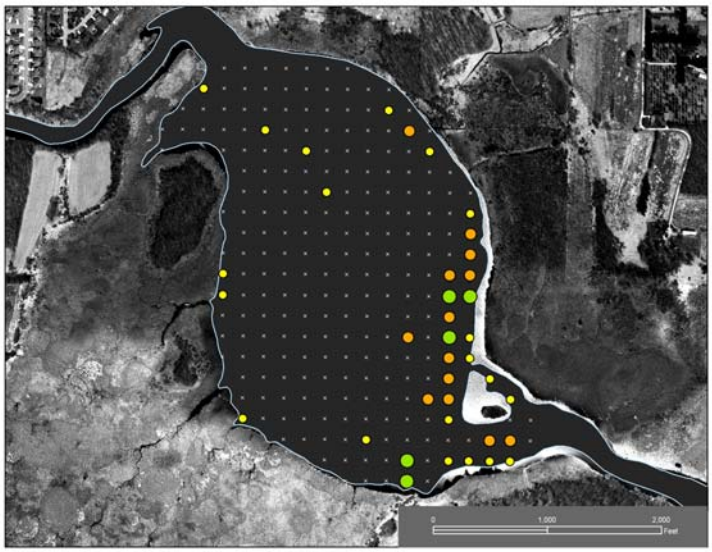
Appendix F: 2006 Mud Lake Aquatic Plant Distributions

Individual Plant Species Amounts

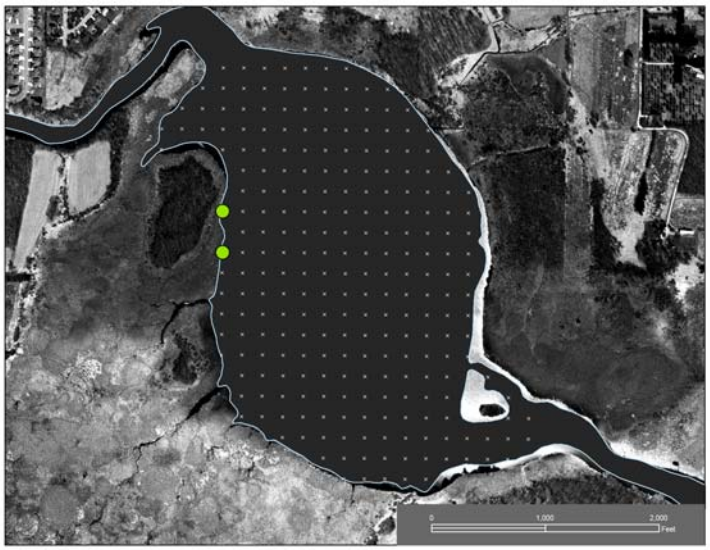
Amount Found / Rake
- overflowing, can't see top of rake head
- rake head ~1/2 full, between 1 & 2
- few plants on rake head
- × nothing found

perimeter of sampling points (provided by WDNR)

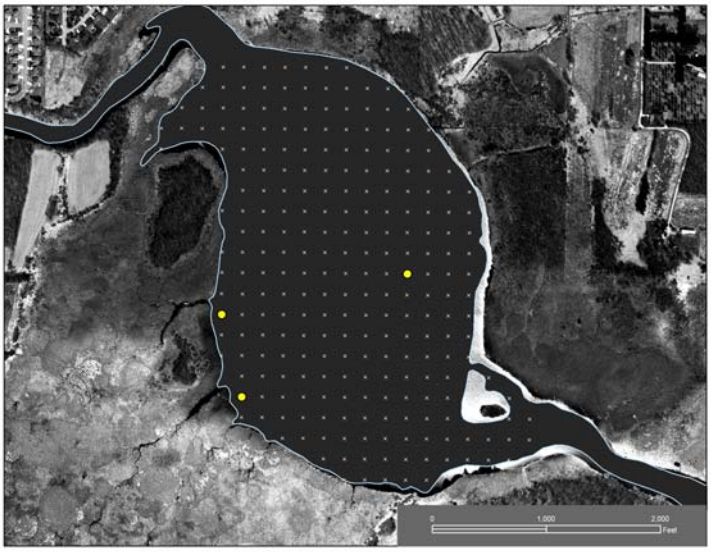
F13. Wild Celery



F14. Typha



F15. Ranunculus

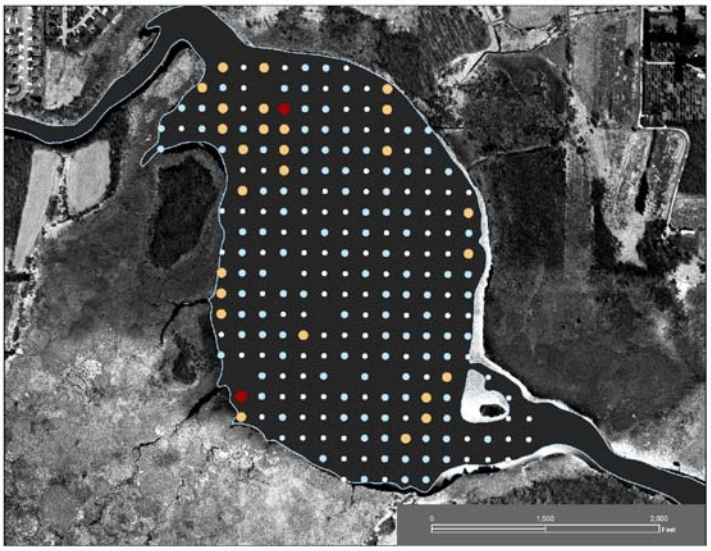


Appendix F: 2006 Mud Lake Aquatic Plant Distributions

Total Number of Plant Species

Number of Species
- 4
- 3
- 2
- 1
- 0

F16. Total Number of Species (includes exotics)



F17. Total Number of Species (no exotics)