BLACKHAWK LAKE AQUATIC INVASIVE SPECIES EDUCATION, PREVENTION & PLANNING GRANT (AEPP-410-14) REPORT FOR 2015 (January 2016)

Water Quality Monitoring

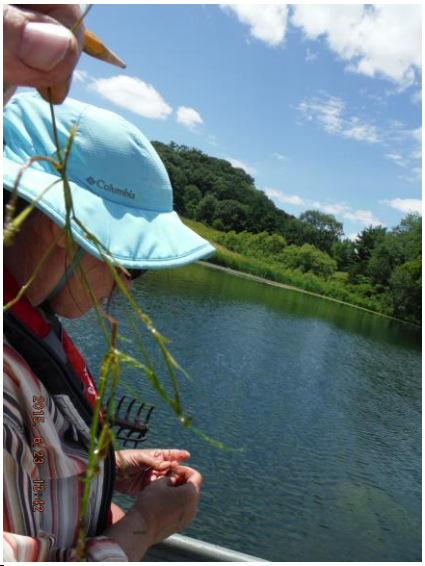
Blackhawk Lake was monitored by DFS Conservation Consulting for Secchi disk transparency on 9 dates in 2015 (5/1, 5/19, 6/6, 6/23, 6/30, 7/15, 7/27, 8/12, 8/26/15), for phosphorus on 5/19/15 and for phosphorus and chlorophyll on 6/23, 7/27, and 8/26/15. Data was entered into DNR's Surface Water Integrated Monitoring System (SWIMS). The 2015 water quality data and report, as well as Secchi disk transparency and Trophic State Index comparisons from 1997 – 2015 are found in Appendix A.

The water clarity of Blackhawk Lake was very good from May–July, 2015, with Secchi disk transparency ranging from 13 feet on May 1 during spring turnover to high of 23.5 feet on May 19, and between 15 and 20 feet during June and July. Aquatic plants began to senesce in August, making nutrients became readily available to fuel blue-algae blooms. By 8/12, the Secchi was reduced to 10 feet with some blue-green algae present. On 8/26, the clarity had been reduced to 7 feet, with a developing blue green algae bloom

Aquatic Plant Monitoring

Visual and rake boat surveys for Eurasian Water Milfoil (EWM) were conducted on 5/1, 5/19, 6/6, 6/23, 6/30, 7/15, 7/27, 8/12, 8/26/15. Photos were taken and notes made of the aquatic plants found. A point-intercept Aquatic Plant Survey was conducted on the entire lake on 6/23 and 6/30 with assistance from Jeanne Scherer and Katrina Punzel of the Wisconsin Dept. of Natural Resources using the Wisconsin Standard Aquatic Plant Survey Method as described in the DNR publication *Aquatic Plant Management In Wisconsin*.

Aquatic Plant Survey 6/23 & 6/30/15



There were 345 waypoints on the point intercept map for Blackhawk Lake (see Appendix B). Only 301 of those sites were able to be sampled with a rake, pole, or noted as no plants observed when the depth was much deeper than the maximum depth of plant growth. Those that couldn't be sampled were either too shallow, on land, had rocks, were docks or beach area, or there were temporary obstacles, such as boats or swimmers. Visual observations of nearby plants were made for many of those sites by going back near the site after the temporary obstacle has moved or observing the area around the point from the dock, beach, or land. Voucher specimens of the aquatic plants were collected and pressed.

Of those sites sampled, 89 contained vegetation. The maximum depth of plants was 15 feet. There were 150 sites with a depth of 15 feet or less. Based on the grid, the littoral zone is around 43% of the lake surface area. There was an average of 2.11 species per site for sites where vegetation was found. The average rake fullness was 1.95 (with 1 = few, 2 = moderate, and 3 = abundant). Rake fullness was determined for eleven different species at the sites sampled. Another 8 species were visually observed, but abundance was not determined.

No *Myriophyllum spicatum* (Eurasian water milfoil) was found. The most common plants in order of relative frequency among the sites sampled (not including filamentous algae) were: *Potamogen crispus* (curly-leaf pondweed) at 33%, *Ceratophyllum demersum* (coontail) at 20.2%, *Ranunculus aquatilis* (white water crowfoot) at 11.2%, *Elodea canadensis* (common waterweed) at 9%, and *Potamogeton pusillus* (slender pondweed) at 8%.

The Floristic Quality Index of Blackhawk Lake (Nichols, et al) based on the value of native plants observed was 22.6. This is compared to an average of 20.9 for lakes in southwestern Wisconsin and 22.2 for Wisconsin lakes. Blackhawk Lake has a more diverse native aquatic plant population than many other lakes.

The diversity of the native plants was highest in the littoral zone in the nearshore areas of the sand ridge, NNW side of the lake, including the concession dock, fishing pier, and south of the beach, the boat launch, and Pontoon Bay (where water was 5 feet deep or less). Overall the Simpson Diversity Index was relatively low at 0.82, with 1 being low and 0 high.

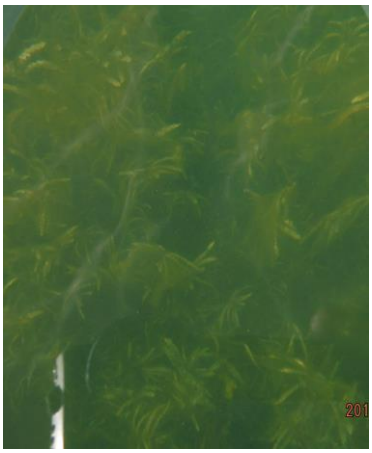
5/1/15 Water Quality and Aquatic Plants

From concession dock to handicapped pier

Fishing pier to concession dock

Curly-leaf pw concession

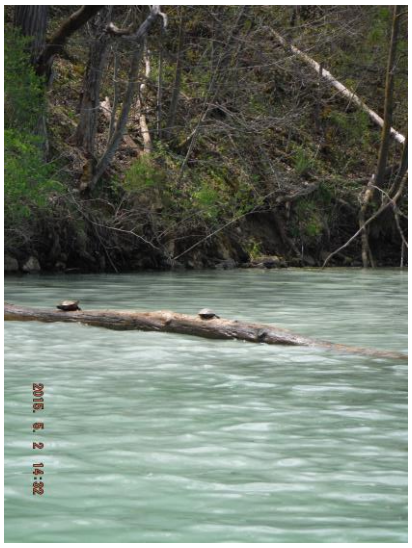
Spawning beds btwn concession & fishing piers



Curly-leaf pondweed

White water crowfoot

Curly-leaf & white water crowfoot



Water color-NE bay

5/19/15 Water Quality and Aquatic Plants

Curly-leaf pondweed

Cattails-S end of beach

Curly-leaf pondweed

White water crowfoot

Concession dock, N side

Concession dock, S side

Fishing pier N side

Fishing pier N side

Fishing pier S side

6/23/15 & 6/30/15 Water Quality and Aquatic Plants

Concession dock

Fishing pier

Beach to fishing pier

Fishing pier – S side

Fishing pier – N side

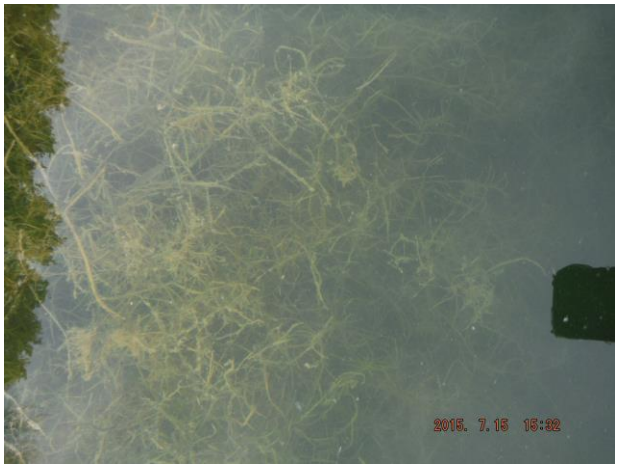

Fishing pier-slender pondweed


Fishing pier-loating leaf pondweed


Fishing pier- arrowhead

7/15/15 Water Quality and Aquatic Plants


Concession dock-slender pondweed/fil. algae


Fishing pier-slender pondweed


Fishing pier-floating-leaf pw


Concession dock to fishing pier


Beach


Cattails S end beach


Concession dock – N side

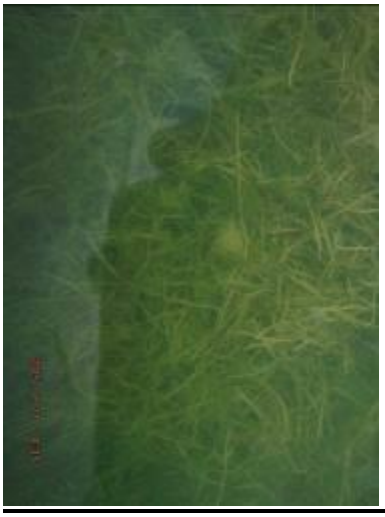

Concession dock – S side

7/27/15 Water Quality and Aquatic Plants


Concession dock


Concession dock deeper


Concession dock S side


Water stargrass-concess dock


Chara, water stargrass, others


Floating-leaf pondweed/arrowhead btwn fishing pier & concession dock

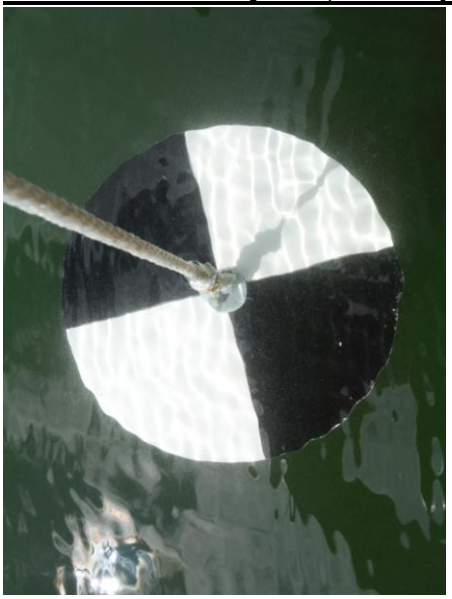
Fishing pier

Beach looking N

S end of beach-treated cattails

S end of beach-treated cattails

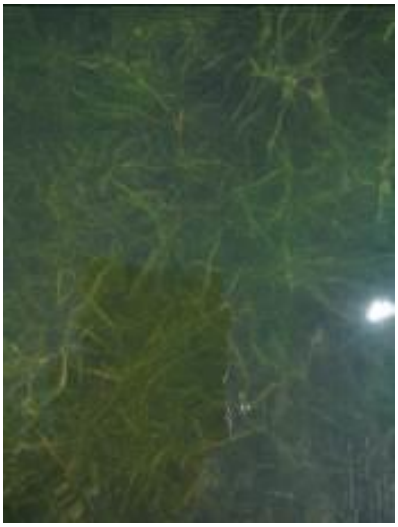
8/26/2015 Water Quality and Aquatic Plants



Water clarity

Concession dock

Concession dock S side



Fishing pier-water stargrass

Fishing pier-arrowhead, floating-leaf pondweed

Fishing pier

Fishing pier S to beach

Beach –cattails senescing where treated

Boat landing S side- AIS sign & arrowhead

Boat landing-S side vegetation

Boat landing-N side emergents

Aquatic Plant Management

Based on the 2014 data, the following recommendations were made regarding aquatic plant management in 2015. To maintain navigational access and manage nuisance plant growth so it does not impair navigation, fishing, and swimming, the Blackhawk Lake Recreation Area should apply for a permit to chemically treat within 50 feet of the fishing pier and the boat concession dock, and the entire beach area. The treatment should be done between mid-May and mid-June as needed before the nuisance curly leaf pondweed, slender pondweed, sago pondweed, and coontail become abundant. Treatment should not be done after July 15 since beneficial native plants such as water stargrass, Elodea, Chara, and floating leaf pondweed are present at that time.

Blackhawk Lake Recreation Area received a permit to chemically treat the areas around the boat concession dock, fishing pier, and beach in 2015 (Appendix C). The permit from DNR recommended that diquat-based products be used for the submersed plants to improve navigation and fishing access, and glyphosate be used on the cattails in the reclaimed beach area. Susan Graham, DNR Lakes Management Coordinator, noted in a message to the applicator, Stantec Consulting Services, that it was important not to stir up the bottom sediments in the area of treatment, as that would decrease the effectiveness of the chemical. They should approach the treatment areas from the deeper water, injecting or spraying toward the shoreline.

The treatment was performed on 6/23/15 by Stantec Consulting Services. Rather than spraying as recommended, Stantec dragged the sprayer hoses from the back of the boat in the shallow areas, stirring up the bottom sediment.

Before the treatment, curly leaf pondweed, stringy slender and sago pondweed, and coontail were a nuisance, wrapping around boat props and significantly reducing navigation. Nine days after treatment (during the aquatic plant survey on 6/30/15), the cattails were beginning to die off in the area treated to the south of the beach. The plants around the boat concession dock and the fishing pier didn't seem to be greatly affected yet by the treatment. Those around the fishing pier were especially green and healthy. (The herbicide can take 14 or more days to show maximum effect).

On 7/15/15, there was still a large amount of vegetation around the fishing pier, but less at the boat concession dock in the deeper water. It didn't cause significant impairment of navigation in deeper reaches of the boat dock the rest of the season. There was still a lot of healthy native vegetation (especially water stargrass) around the fishing pier until late summer, when it died off naturally.

Recommendations for aquatic plant management in 2016 are similar to 2015. Areas within 50 feet of the fishing pier and the boat concession dock and the entire beach should be chemically treated as needed to improve the navigability and swimming and fishing access. Depending on the plant growth, the first treatment should be done in mid- May to early June. Another treatment may be needed between mid-June and mid-July. Treatments should be timed to be effective by the Memorial Day weekend and the July 4 week. Treatments should be done by spraying or injecting the chemicals from the deeper water into the shallows. Chemicals to be used will be determined by the DNR Lakes Management Coordinator.

Clean Boats, Clean Waters

Clean Lakes, Clean Waters watercraft inspections and education were done by Southwest Badger Resource and Development Council, Blackhawk Lake Recreation Area staff, and DFS Conservation Consulting. Brochures on Eurasian water milfoil and aquatic invasive species were available in a prominent place at the front desk in the office.

Appendix A
2015 Water Quality Data

Lake Water Quality 2015 Annual Report

Blackhawk Lake
Iowa County
Waterbody Number: 1239400

Lake Type: DRAINAGE
DNR Region: SC
GEO Region:SW

Site Name	Storet #
Black Hawk Lake - Deep Hole	253124

Date	SD (ft)	SD (m)	Hit Bottom	CHL	TP	TSI (SD)	TSI (CHL)	TSI (TP)	Lake Level	Clarity	Color	Perception
05/01/2015	13	4	NO		25.2	40		53	NORMAL	MURKY	GREEN	2-Very minor aesthetic problems
05/19/2015	23.5	7.2	NO			32			NORMAL	CLEAR	BLUE	1-Beautiful, could not be nicer
06/06/2015	18	5.5	NO			35			NORMAL	CLEAR	BLUE	1-Beautiful, could not be nicer
06/23/2015	20	6.1	NO	2.53	26.4	34	42	54	NORMAL	CLEAR	BLUE	1-Beautiful, could not be nicer
06/30/2015	15	4.6	NO			38			NORMAL	CLEAR	BLUE	1-Beautiful, could not be nicer
07/15/2015	15.5	4.7	NO			38			NORMAL	CLEAR	BLUE	2-Very minor aesthetic problems
07/27/2015	17	5.2	NO	5.32	26.5	36	47	54	NORMAL	MURKY	GREEN	2-Very minor aesthetic problems
08/12/2015	10	3	NO			44			NORMAL	MURKY	GREEN	3-Enjoyment somewhat impaired (algae)
08/26/2015	7	2.1	NO	35.6	35	49	62	56	NORMAL	MURKY	GREEN	3-Enjoyment somewhat impaired (algae)

Date	Collector Comments
05/01/2015	Overcast- slight breeze- Some particles in water and milky color in major inlets. No Eurasian watermilfoil (EWM). Lush native plant growth (e.g. water buttercup- elodea- small pondweed- coontail) covering bottom in shallow areas. Curly-leaf pondweed interspersed with other plants in shallow water and emerging near the surface in deeper water.
05/19/2015	No Eurasian watermilfoil. Curly-leaf pondweed in deeper water. Lush native plant growth covering bottom in shallower water (e.g.- water buttercup- water stargrass- small pondweed- elodea- sago pondweed).
06/06/2015	Clear- slight breeze- ~80. No EWM. Mostly curly-leaf pondweed + sago in deeper areas. Lush growth of native plants such as water buttercup. water stargrass- small leaved pondweed- coontail and elodea in shallows.
06/23/2015	

	Clear- slight breeze- ~80. Aquatic Plant Survey with Jeanne Shearer and Katrina Punze found no EWM- native vegetation in shallows. Beach and boat concession areas being chemically treated with 2-4- D.
06/30/2015	Partly cloudy- slight breeze. Aquatic plant survey with Jeanne Scherer and Katrina Punzel found no EWM- with native plant growth in shallows. Tiny green algae in water.
07/15/2015	No EWM. Sago/small leaved pondweed on sand ridge beginning to senesce- not mats like usually are. Chara and other lush plant growth just S. of beach. Some very small green algae in water- but not aesthetic problem.
07/27/2015	Slight breeze- 87- humid. No EWM. Sago pondweed + other plants in deeper water senescing. Still abundant variety of plants such as water stargrass- Chara- Elodea- coontail- flatstem pondweed in nearshore areas (~2 - 6")-
08/12/2015	Calm to slight breeze- ~80. No EWM. A little blue green algae. Lot of water stargrass in shallows (2' - 4"). Most of other plants dying off. Some build-up of decaying filamentous algae + scum in shallows.
08/26/2015	No EWM. Aquatic plants senescing. Blue green algae blooming developing.

Date	Data Collectors	Project
05/01/2015	Donna Sefton	Citizen Lake Monitoring - Water Quality - Black Hawk Lake; Blackhawk Lake
05/19/2015	Donna Sefton	Citizen Lake Monitoring - Water Quality - Black Hawk Lake; Blackhawk Lake
06/06/2015	Donna Sefton	Citizen Lake Monitoring - Water Quality - Black Hawk Lake; Blackhawk Lake
06/23/2015	Donna Sefton	Citizen Lake Monitoring - Water Quality - Black Hawk Lake; Blackhawk Lake
06/30/2015	Donna Sefton	Citizen Lake Monitoring - Water Quality - Black Hawk Lake; Blackhawk Lake
07/15/2015	Donna Sefton	Citizen Lake Monitoring - Water Quality - Black Hawk Lake; Blackhawk Lake
07/27/2015	Donna Sefton	Citizen Lake Monitoring - Water Quality - Black Hawk Lake; Blackhawk Lake
08/12/2015	Donna Sefton	Citizen Lake Monitoring - Water Quality - Black Hawk Lake; Blackhawk Lake
08/26/2015	Donna Sefton	Citizen Lake Monitoring - Water Quality - Black Hawk Lake; Blackhawk Lake

SD = Secchi depth measured in feet converted to meters; Chl = Chlorophyll a in micrograms per liter(ug/l); TP = Total phosphorus in ug/l, surface sample only; TSI(SD), TSI(CHL), TSI(TP) = Trophic state index based on SD, CHL, TP respectively; Depth measured in feet.

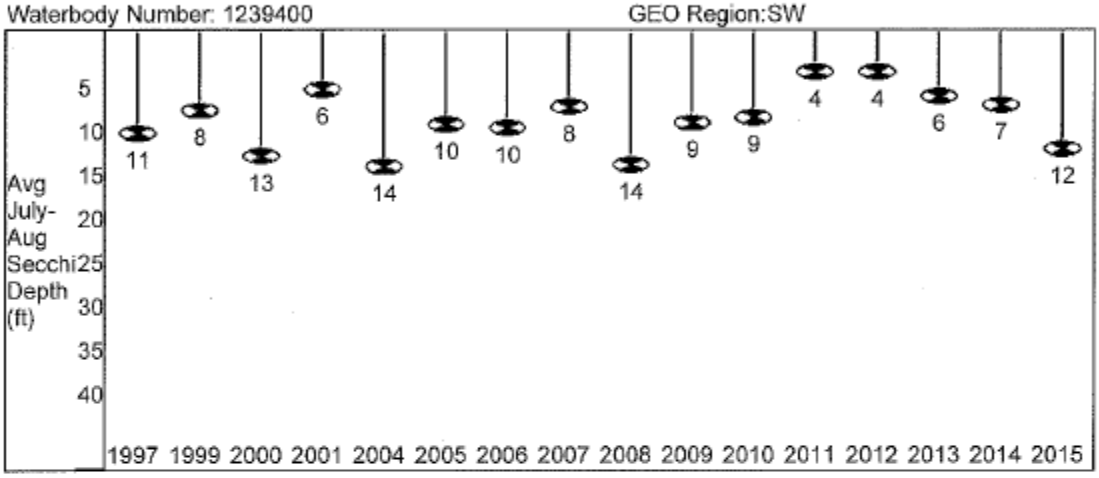
Wisconsin Department of Natural Resources **Wisconsin Lakes Partnership**

Report Generated: 12/07/2015

Wisconsin Department of Natural Resources

Blackhawk Lake
Iowa County
Waterbody Number: 1239400

Lake Type: DRAINAGE
DNR Region: SC
GEO Region:SW

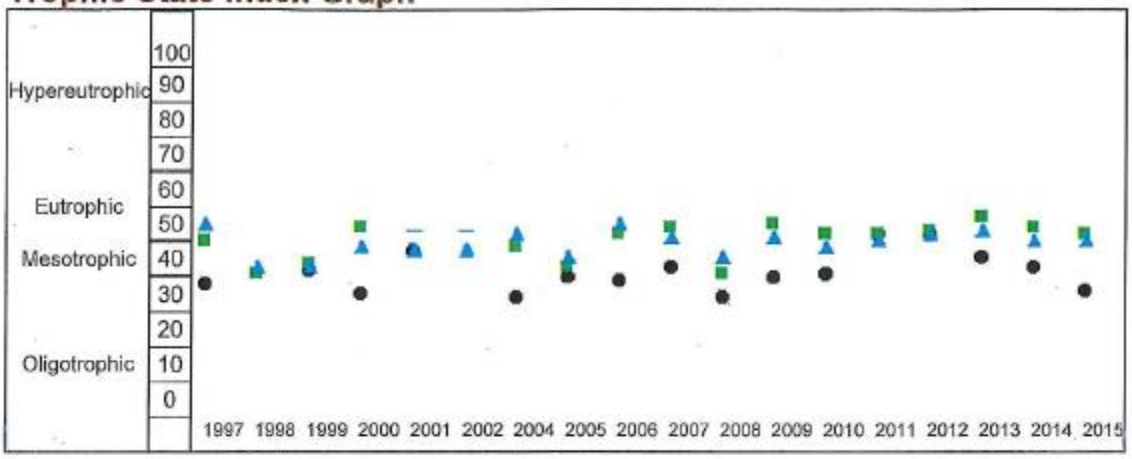


Past secchi averages in feet (July and August only).

Year	Secchi Mean	Secchi Min	Secchi Max	Secchi Count
1997	10.63	6.75	14.5	2
1999	8	8	8	1
2000	13.2	2	19	5
2001	5.5	5.5	5.5	3
2004	14.3	14.3	14.3	2
2005	9.5	8.5	10.5	2
2006	10	8	13	5
2007	7.6	4	18	6
2008	14.13	13.25	15	2
2009	9.42	4.5	15.75	3
2010	8.83	4.5	17	3
2011	3.67	3	5	3
2012	3.67	3	4	3
2013	6.33	3	10	3
2014	7.33	3	14	3
2015	12.38	7	17	4

Report Generated: 12/07/2015

Trophic State Index Graph



Monitoring Station: Black Hawk Lake - Deep Hole, Iowa County
Past Summer (July-August) Trophic State Index (TSI) averages.

● = Secchi ■ = Chlorophyll ▲ = Total Phosphorus

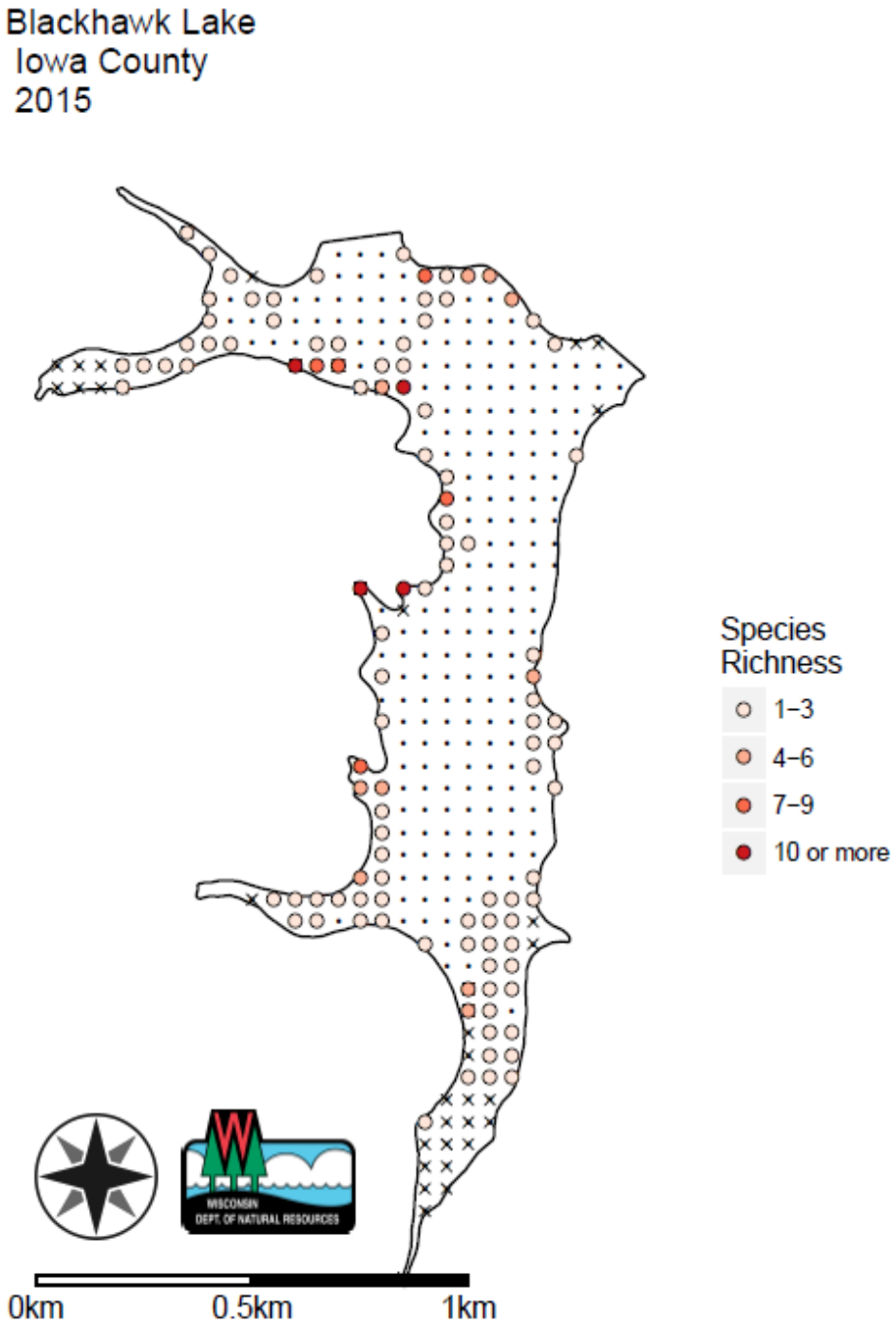
TSI(Chl) = TSI(TP) = TSI (Sec)	It is likely that algae dominate light attenuation.
TSI(Chl) > TSI(Sec)	Large particulates, such as Aphanizomenon flakes dominate
TSI(TP) = TSI(Sec) > TSI (Chl)	Non-algal particulate or color dominate light attenuation
TSI(Sec) = TSI(Chl) >= TSI (TP)	The algae biomass in your lake is limited by phosphorus
TSI(TP) > TSI(Chl) = TSI (Sec)	Zooplankton grazing, nitrogen, or some factor other than phosphorus is limiting algae biomass

TSI	TSI Description
TSI < 30	Classical oligotrophy: clear water, many algal species, oxygen throughout the year in bottom water, cold water, oxygen-sensitive fish species in deep lakes. Excellent water quality.
TSI 30-40	Deeper lakes still oligotrophic, but bottom water of some shallower lakes will become oxygen-depleted during the summer.
TSI 40-50	Water moderately clear, but increasing chance of low dissolved oxygen in deep water during the summer.
TSI 50-60	Lakes becoming eutrophic: decreased clarity, fewer algal species, oxygen-depleted bottom waters during the summer, plant overgrowth evident, warm-water fisheries (pike, perch, bass, etc.) only.
TSI 60-70	Blue-green algae become dominant and algal scums are possible, extensive plant overgrowth problems possible.
TSI 70-80	Becoming very eutrophic. Heavy algal blooms possible throughout summer, dense plant beds, but extent limited by light penetration (blue-green algae block sunlight).
TSI > 80	Algal scums, summer fishkills, few plants, rough fish dominant. Very poor water quality.

Trophic state index (TSI) is determined using a mathematical formula (Wisconsin has its own version). The TSI is a score from 0 to 110, with lakes that are less fertile having a low TSI. We base the overall TSI on the Chlorophyll TSI when we have Chlorophyll data. If we don't have chemistry data, we use TSI Secchi. We do this rather than averaging, because the TSI is used to predict biomass. This makes chlorophyll the best indicator. Visit Bob Carlson's website, dipin.kent.edu/tsi.htm, for more info.

Appendix B
Aquatic Plant Point-Intercept Survey
June, 2015

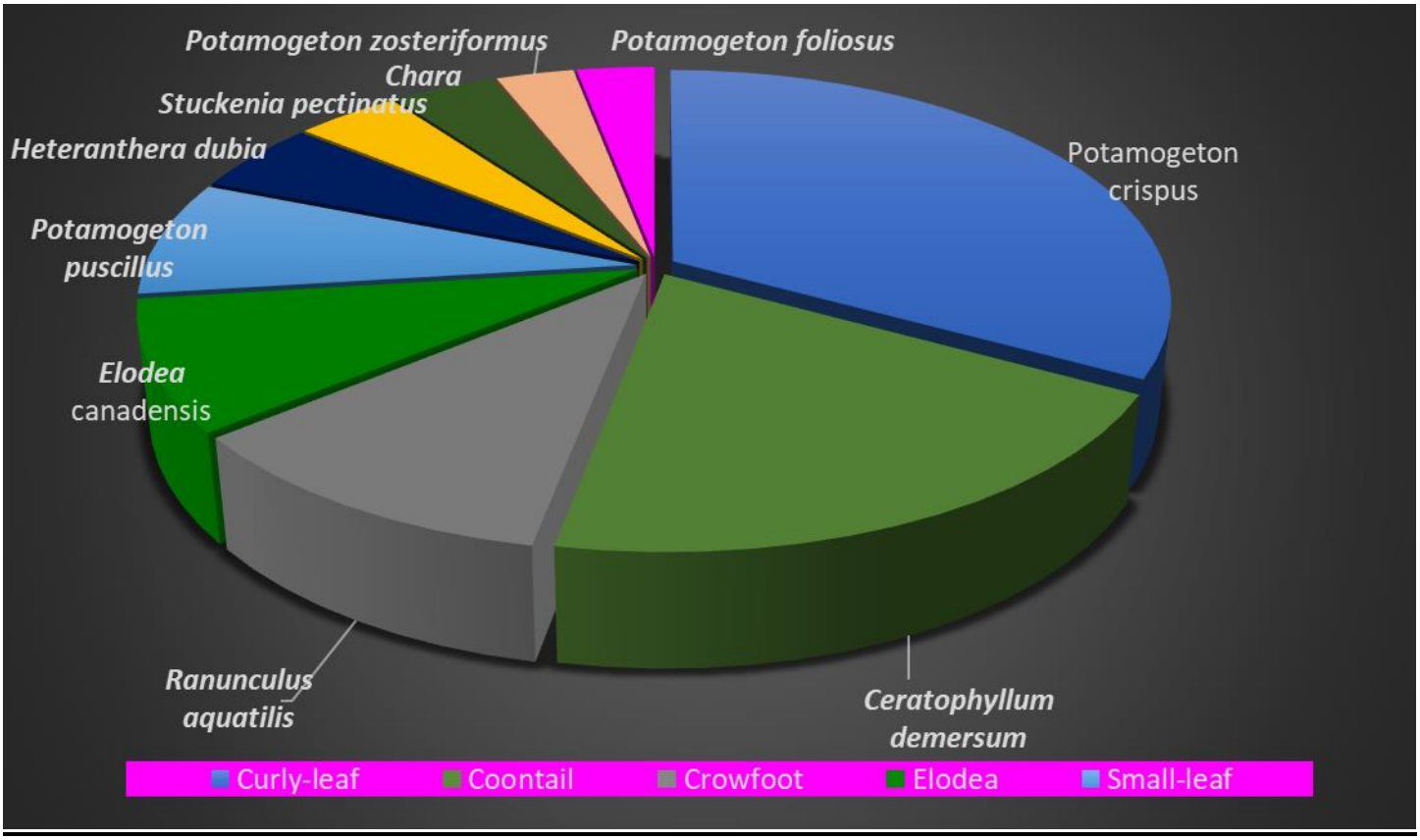
Blackhawk L Aquatic Plant Survey Species Richness June 2015



Blackhawk Lake 2015 Aquatic Plant Survey Summary

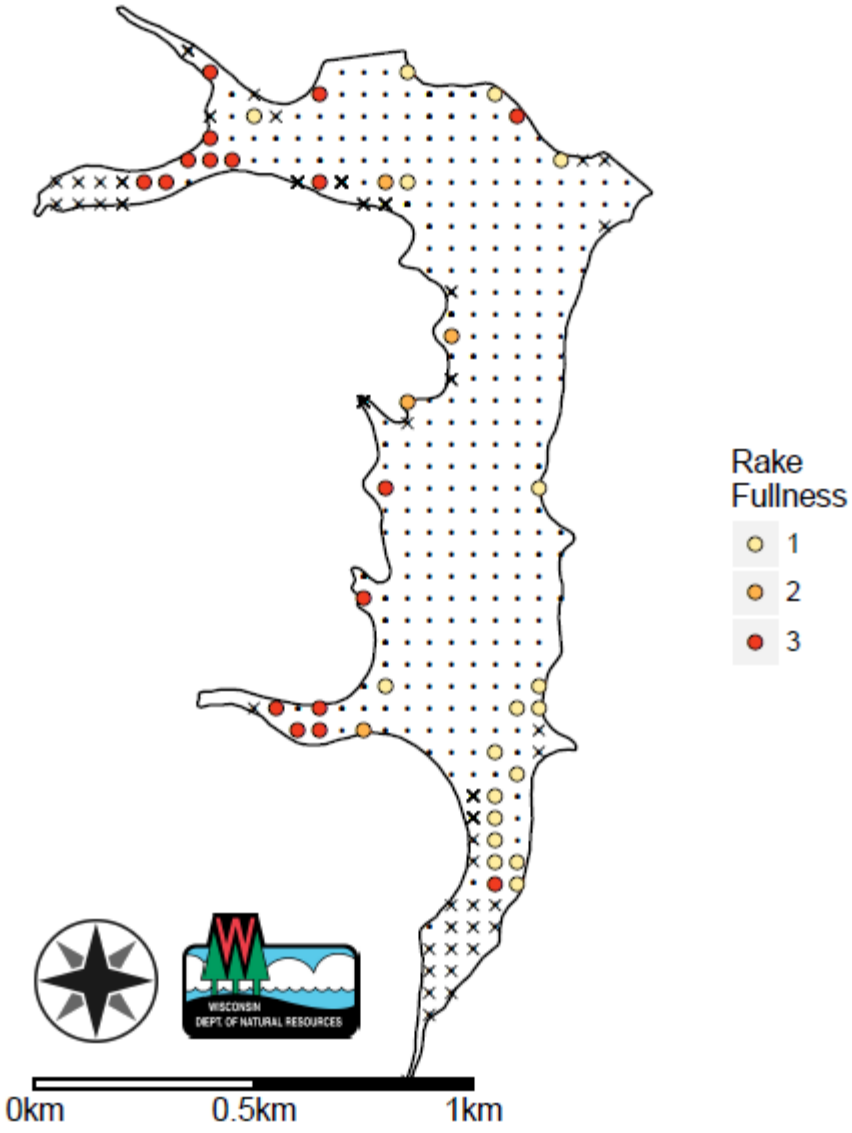
SPECIES	FREQUENCY % NON ALGAE	FREQ OCCUR VEG AREAS	SAMPLED W/SPECIES	AVE RAKE FULLNESS	# SITES VISUAL	QUALITY RATING
SPECIES COLLECTED AT SITES						
Potamogenton crispus	33	69.66	62	1.29	15	0
(curly-leaf pondweed)						
Ceratophyllum demersum	20.2	42.7	38	1.47	18	3
(coontail)						
Filamentous algae		29.21	26	1.35	28	0
Ranunculus aquatilis	11.2	23.6	21	1.43	9	8
(white water crowfoot)						
Elodea canadensis	9	19.1	17	1.18	8	3
(common water weed)						
Potamogen pusillus	8	16.85	15	2	6	7
(small-leaf pondweed)						
Heteranthera dubia	5.3	11.24	10	1.2	11	6
(water stargrass)						
Stuckenia pectinata	4.3	8.99	8	1.25	4	3
(sago pondweed)						
***Chara* spp.**	3.7	7.87	7	1.43	2	7
(muskgrass)						
Potamogeton zosteriformus	2.7	5.62	5	1.6	1	6
(flat-stem pondweed)						
Potamogen foliosus	2.7	5.62	5	1.4	4	6
(leafy pondweed)						
# of species sampled = 11; # with Floristic Quality Index Rating = 8						
SPECIES ONLY VISUALLY OBSERVED						
Lemna minor						4
(small duckweed)						
Potamogen nodosus						7
(long leaf pondweed)						
Sagittaria breviostra						9
(midwestern arrowhead)						
Sagittaria latifolia						3
(common arrowhead						
Schoenoplectus acutus						6
(hardstem bulrush)						
Schoenoplectus tabernaemontani						4
(soft-stem bulrush)						
Wolffia columbiana						5
(common watermeal)						
# of macrophyte species only visually observed = 8						
AVE FLORISTIC QUALITY RATING = 5.47						
FLORISTIC QUALITY INDEX = 22.556						

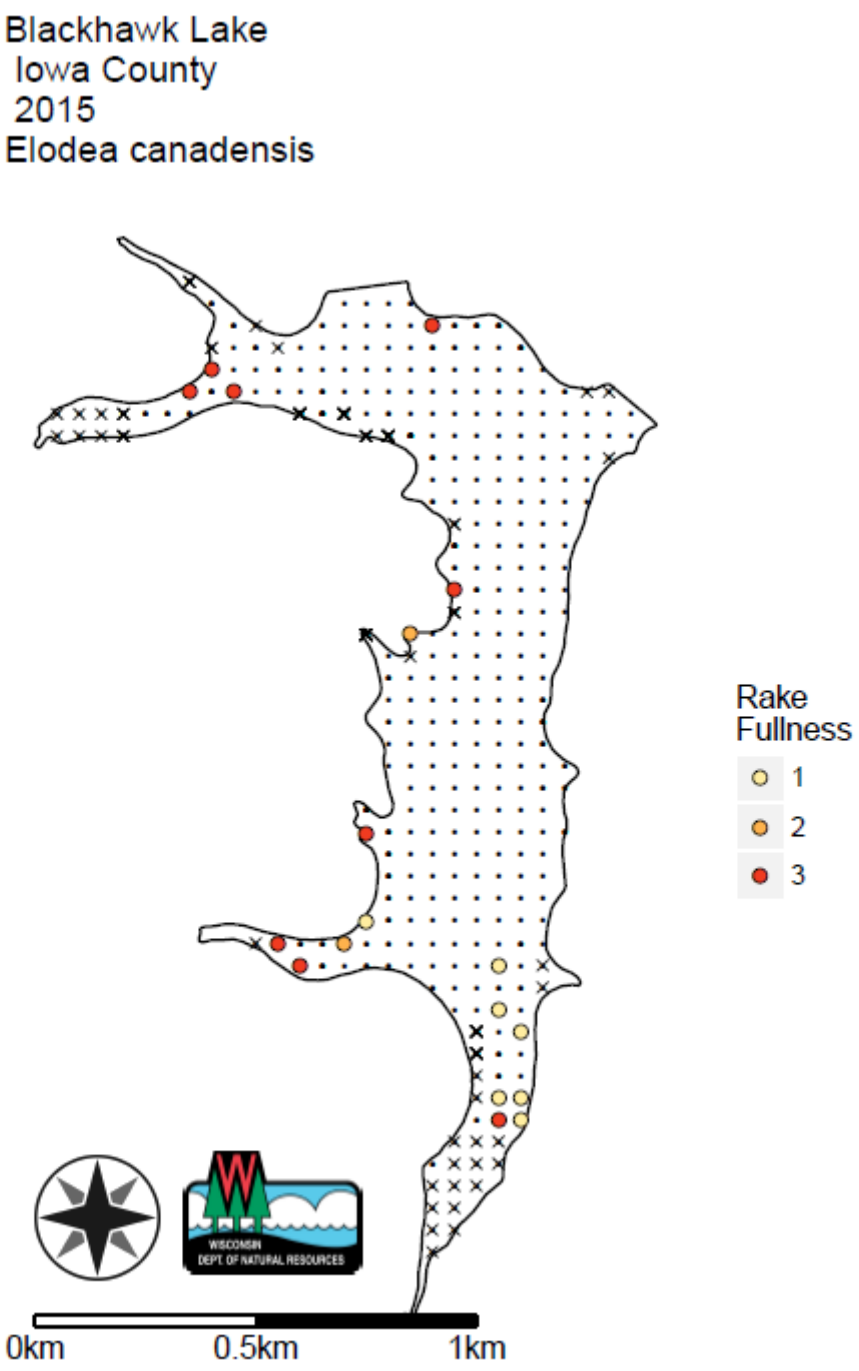
Blackhawk L Aquatic Plant Relative Frequency June 2015



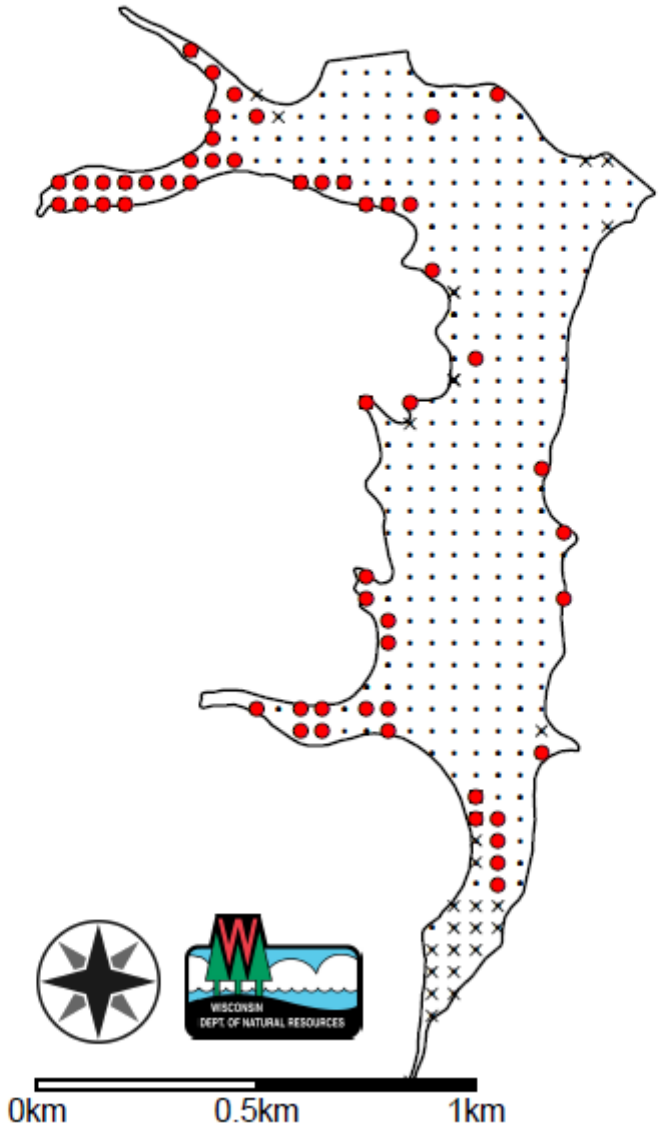
Note: Common name for *Potamogen puscillus* is slender pondweed.

Blackhawk Lake
Iowa County
2015
Ceratophyllum demersum

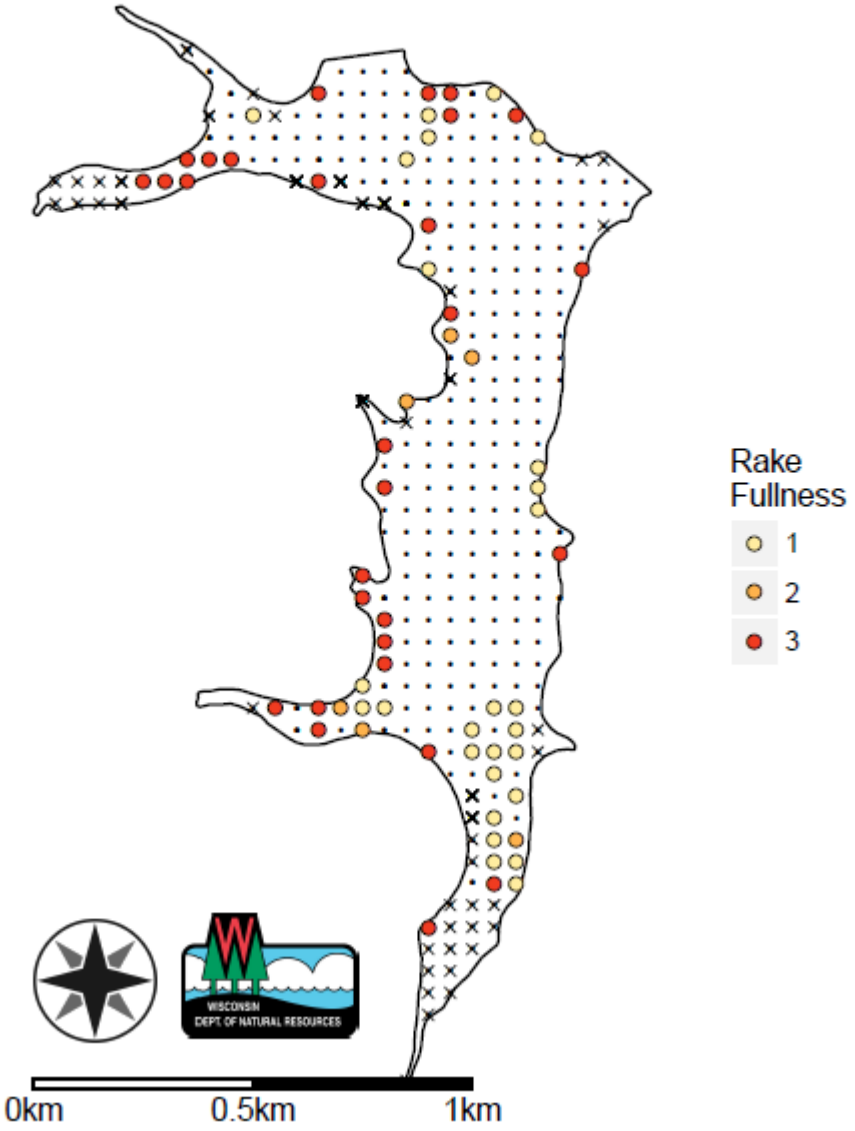



Blackhawk Lake
Iowa County
2015
Elodea canadensis
Rake
Fullness
1
2
3
WISCONSIN
DEPT. OF NATURAL RESOURCES
0km
0.5km
1km

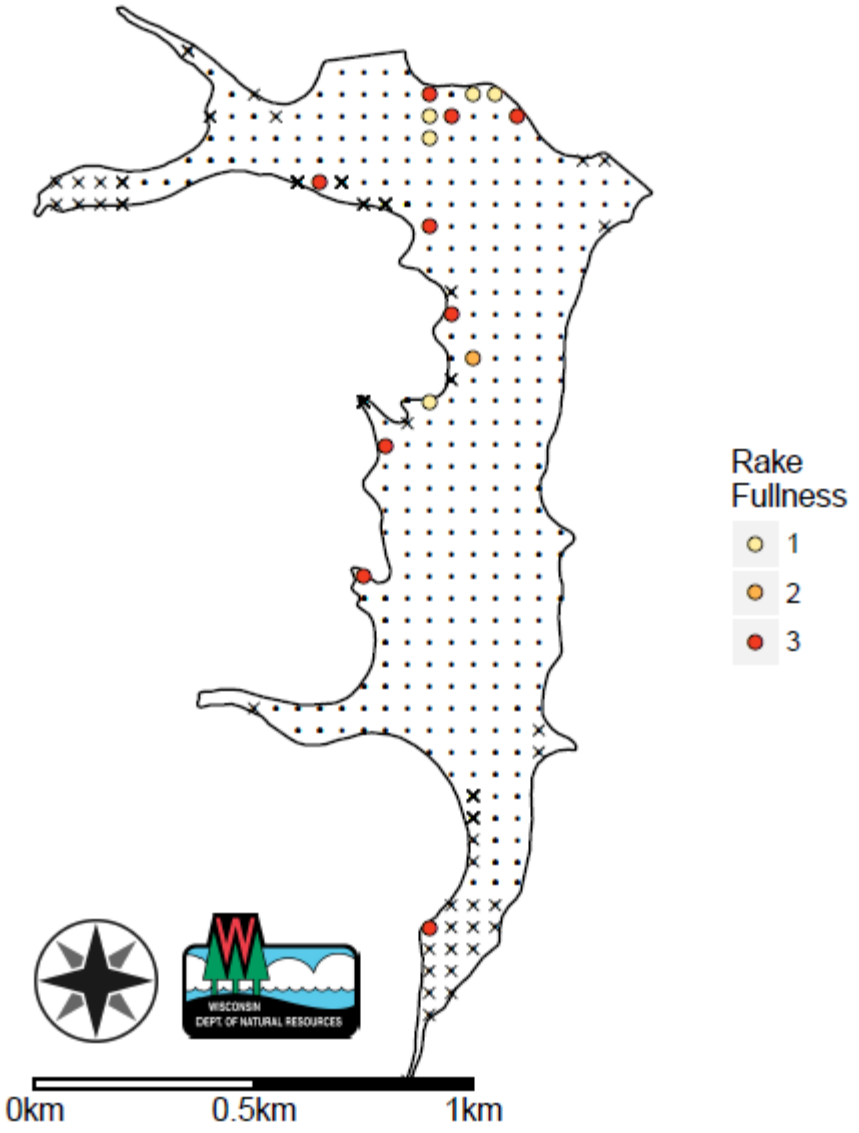
Blackhawk Lake
Iowa County
2015
Filamentous algae



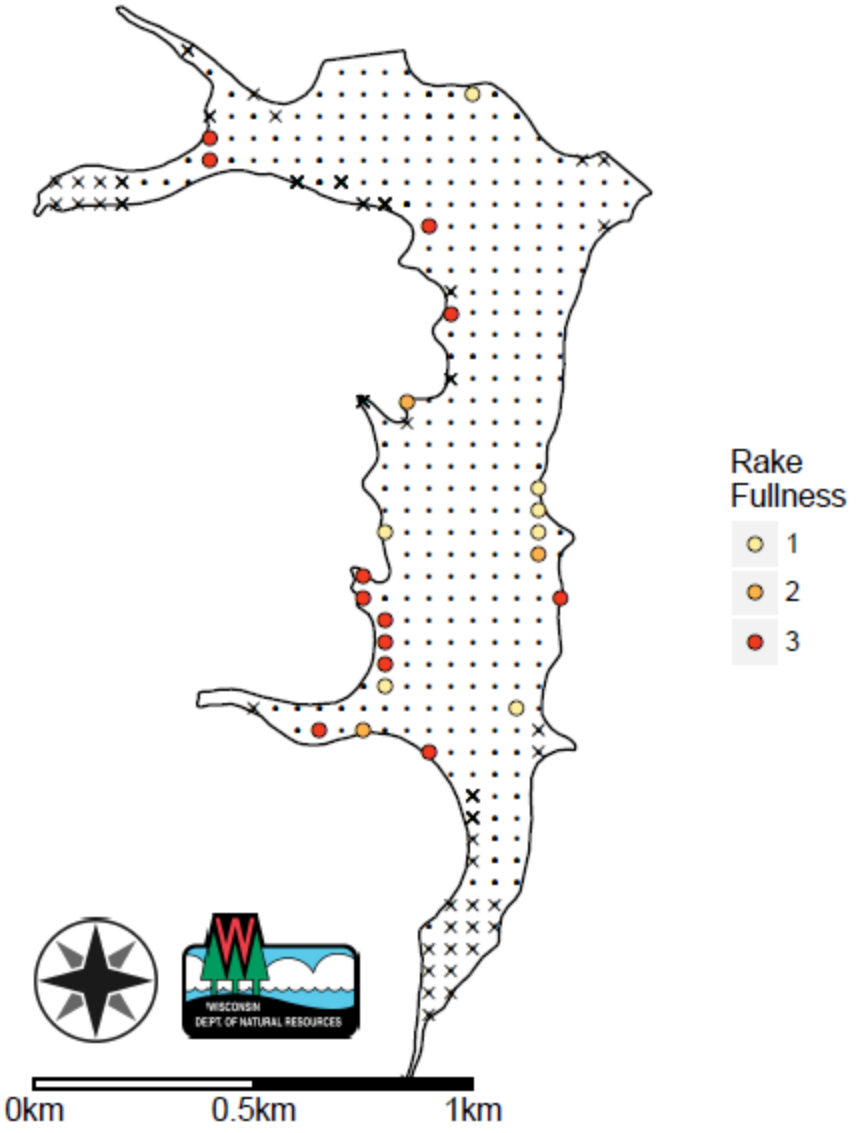
Blackhawk Lake
Iowa County
2015
Potamogeton crispus

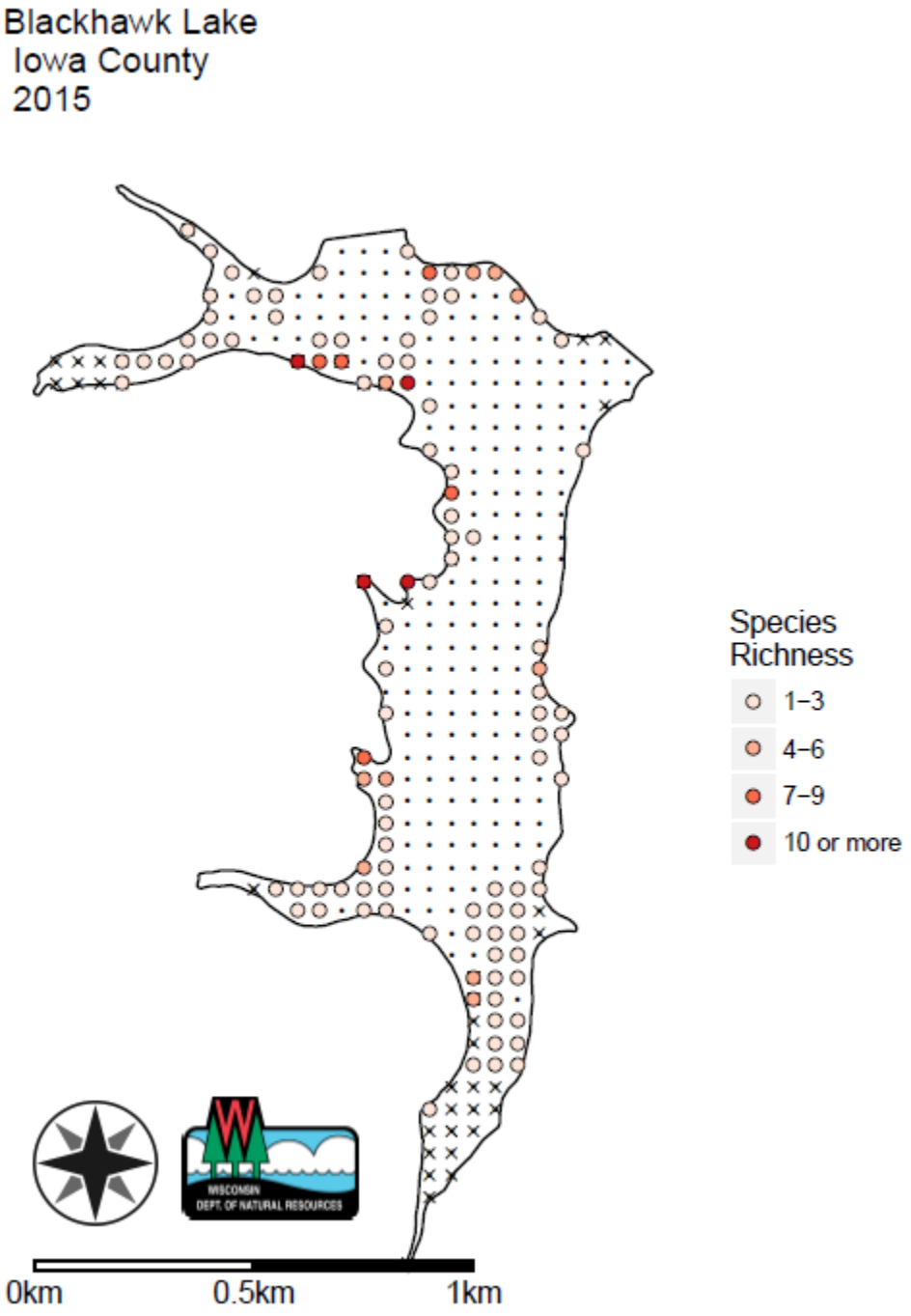


Blackhawk Lake
Iowa County
2015
Potamogeton pusillus

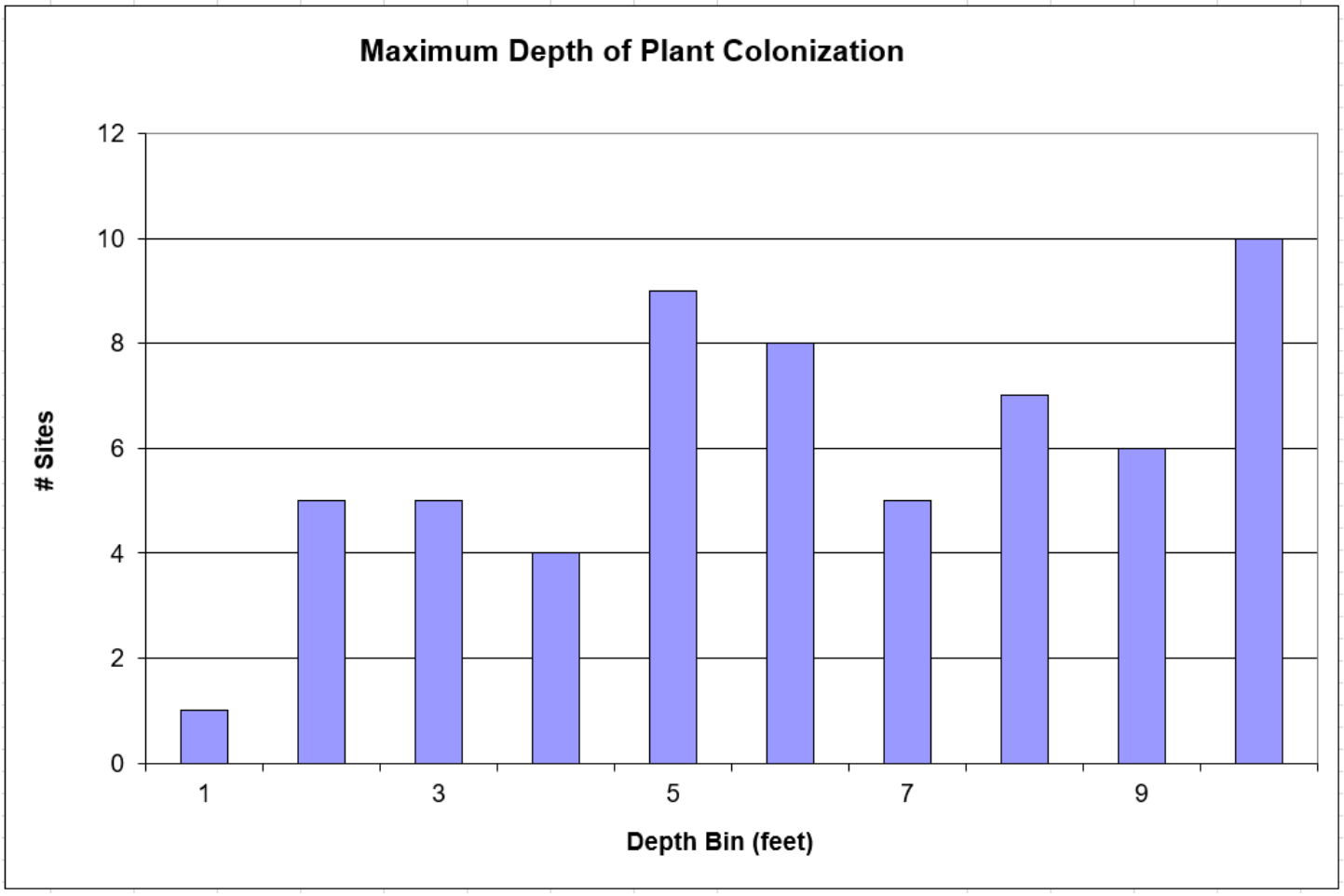


Blackhawk Lake
Iowa County
2015
Ranunculus aquatilis




Blackhawk Lake
Iowa County
2015
Species
Richness
1–3
4–6
7–9
10 or more
WISCONSIN
DEPT. OF NATURAL RESOURCES
0km
0.5km
1km

Blackhawk Lake Aquatic Plant Survey 2015



Appendix C
Aquatic Plant Management Permit, 2015

State of Wisconsin
DEPARTMENT OF NATURAL RESOURCES
3911 Fish Hatchery Road
Fitchburg WI 53711-5397

Scott Walker, Governor
Cathy Stepp, Secretary
Telephone 608-266-2621
Toll Free 1-888-936-7463
TTY Access via relay - 711

June 12, 2015

Cobb-Highland Recreation Commission
2025 County Rd BH
Highland, WI 53543

PERMIT# SC-2015-25-901

Subject: Aquatic Plant Management Permit for Blackhawk Lake, Iowa County

Dear Applicant:

Enclosed is your permit for chemical control of dense aquatic plants in .18 acres of Blackhawk Lake, Iowa County, Wisconsin. Your permit application has been reviewed and meets the minimum requirements by law and a permit is being issued. Issuance of the permit is not an endorsement or approval for the action authorized.

Permit Conditions:
Treatments are limited in area to protect native plants and shoreline habitat for animals that have been documented in the area. Treatment areas are intended to allow shorefishing for anglers, and reduce difficulties with navigation from the pier. Cattail control is allowed to help reclaim the beach area.

The following herbicides are not permitted for use in this pond: Clipper, fluridone products, and Hydrothol 191. Any herbicide selected must be applied at no higher than the label rate. A permit amendment must be issued by the department if any herbicide or applicator not already listed on the application form will be added.

The herbicide applicator must follow the disinfection protocol following the signature to reduce the possible spread of fish diseases.

Pesticide treatment area signs must identify the areas that are treated with chemicals, and remain posted for the duration of any use restrictions according to the chemicals used.

Supervision of this treatment is required. Please notify me via email at susan.graham@wisconsin.gov. I will be available to supervise any day from 6/23 to 6/26. If you would like to schedule a treatment date after this time period, please call or email to schedule a time.

The permit holder must submit form 3200-111 (available online), "Aquatic Plant Management Herbicide Treatment Record", for each treatment as follows:

1. **Immediately, if any unusual circumstances occur during the treatment.**
2. **Within 30 days, if treatment occurred.**
3. **By October 1 of this year, if no treatment occurred.**

Thank-you for complying with Chapter NR 107, Wisconsin Administrative Code concerning aquatic plant management.

Sincerely, Susan Graham

Susan Graham
Lake Management Coordinator
608-275-3329

e-copy. Gene Van Dyck, DNR Fisheries Manager
Donna Sefton, DFS Conservation Consulting
Mark Kordus, Stantec Consulting Services, Inc.

DISINFECTION PROTOCOL:

All equipment used for the project including but not limited to tracked vehicles, barges, boats, silt or turbidity curtain, hoses, sheet pile and pumps shall be de-contaminated for invasive species and viruses prior to use and after use. **Specific disinfection measures are required on all waters infected with Viral Hemorrhagic Septicemia (VHS) and must be taken prior to moving to another waterbody. The most current disinfection protocols along with a VHS-affected waters list can be found at the following website http://dnr.wi.gov/topic/fishing/vhs/vhs_prevent.html**

The following steps should be taken *every time* you move your equipment to avoid transporting invasive viruses and species. To the extent practicable, equipment and gear used on infested waters should not be used on other non-infested waters.

1. Inspect and remove aquatic plants, animals, and mud from your equipment.
2. Drain all water from your equipment, including but not limited to tracked vehicles, barges, boats, silt or turbidity curtain, hoses, sheet pile and pumps
3. Dispose of aquatic plants, animals in the trash. Never release or transfer aquatic plants, animals or water from one waterbody to another.
4. Wash your equipment with hot (>104° F) and/or high pressure water OR allow your equipment to dry thoroughly for 5 days OR follow a current disinfection protocol at the following website **http://dnr.wi.gov/topic/fishing/documents/vhs/disinfection_protocols.pdf**

State of Wisconsin DNR
DNR Department of Natural Resources
Water Permit Central Intake – attn. APM
PO Box 7185
Madison, WI 53707-7185

Chemical Aquatic Plant Control Application and Permit
Wisconsin Pollutant Discharge Elimination System (WPDES)
Pesticide Pollutant Permit Application

Form 3200-004 (R 03/13)

DNR Use Only	
ID Number: SC-2015-25-901	Permit Expiration Date: 10/1/2015
Waterbody #: 1239400	Fee Received: 20.00

Notice: Use of this form is required by the Department for any application filed pursuant to s. 281.17(2), Wis. Stats., and Chapters NR 107, 200 and 205, Wis. Adm. Code. This permit application is required to request coverage for pollutant discharge into waters of the state. Personally identifiable information on this form may be provided to requesters to the extent required by Wisconsin's Open Records Law [ss. 19.31-19.39, Wis. Stats.].

Section I – Applicant Information – Name of Permit Applicant. Also indicate names and addresses of all individuals, associations, communities or town sanitary districts sponsoring treatment. Attach additional sheets if necessary.

Home Address

Name: Cobb-Highland Recreation Commission
Street Address: 2025 County Rd BH
City: Highland | State: WI | ZIP Code: 53543

Lake Address

Name: Blackhawk Lake Recreation Area
Street Address:
City: | State: | ZIP Code:

Phone Number (include area code)
Primary: 623-2707 Secondary: 574-5573

Email Address: bhlake@mhtc.net

Section II – Aquatic Plant Control Location

Waterbody to be Treated (waterbody where treatment area is located): Blackhawk Lake

Lake Surface Area: 220 acres

Estimated Surface Area that is 10 Feet or Less in Depth: acres

County: Iowa | Section: 6 | Township: 7 N | Range: 2 ☒ E ☐ W

Name of Applicator or Firm: Stantec Consulting Services Inc.

Latitude: 43.025654 | Longitude: -90.288624

Street or Route: 209 Commerce Pkwy, Po Box 128

Is the waterbody a private pond? ☐ Yes ☒ No

Does the waterbody have public access? ☒ Yes ☐ No

City: Cottage Grove | State: WI | ZIP Code: 53527

Adjacent Riparian Property Owner Names (attach sheets if necessary)

1.
2.
3.
4.
5.
6.
7.

County: Dane

Phone Number (include area code): 715-781-9976

Email Address: Mark.Kordus@stantec.com

Applicator Certification Number for Category 5 Aquatic Pesticide Application: 077803 James Schaal OK

Business Location License Number (if applicable): 93-80193357-014719 OK

Name of Lake Property Owners' Association Representative or Lake District Representative (if none, please indicate)

Restricted Use Pesticide License Number (if applicable)

Area(s) Proposed for Control: (Note details in permit cover letter for final permitted sizes of treatment areas.)

	Treatment Length		Treatment Width			Estimated Acreage	Average Depth	
A.	400	ft. X	20	ft. ÷ 43,560 ft.² =		.18	3	ft.
B.		ft. X		ft. ÷ 43,560 ft.² =				ft.
C.		ft. X		ft. ÷ 43,560 ft.² =				ft.
D.		ft. X		ft. ÷ 43,560 ft.² =				ft.
E.		ft. X		ft. ÷ 43,560 ft.² =				ft.

Total Estimated Acres

Total from lines A - E

Total from Attached Sheets

Grand Total

If the estimated acreage is greater than 10 acres, or is greater than 10 percent of the estimated area 10 feet or less in depth in Section II, complete and attach Form 3200-004A, Large-Scale Treatment Worksheet. Private pond treatments are exempted from this requirement.

Is this area within or adjacent to a sensitive area designated by the Department of Natural Resources?

☐ Yes ☒ No

DNR Use:

NHI Review? ☒ Yes ☐ No Describe: No concerns.

MAY 13 2015

WT/3 - WY/3 - OGL/3

Section III – Fees

1. s. NR 107.11(1), Wis. Adm. Code, lists the conditions under which the permit fee is limited to the $20 minimum charge.
2. s. NR 107.11(4), Wis. Adm. Code, lists the uses that are exempt from permit requirements.
3. s. NR 107.04(2), Wis. Adm. Code, provides for a refund of acreage fees if the permit is denied or if no treatment occurs.
4. Fee calculations:

Basic Permit Fee (non-refundable) ..... $ 20.00

If proposed treatment is over 0.25 acre, calculate acreage fee:
(round up to nearest whole acre, to maximum of 50 acres.)

_____ acres X $25 per acre = $ _____

If proposed treatment is ≤ 0.25 acre, acreage fee is $0.

Enter Acreage Fee (from above) ..... _____

Total Fee Enclosed ..... $ 20.00

☑ **Site Map:** Attach a sketch or a printed map of lake indicating area and dimensions of each individual area where plant control is desired and flow of surface water outside treatment area. Also show location of property owners riparian to and adjacent to the treatment area. Attach a separate list of owners and corresponding treatment dimensions coded to the lake map, if necessary.

Section IV – Reasons for Aquatic Plant Control

Is this permit being requested in accordance with an approved Aquatic Plant Management Plan? ☒ Yes ☐ No

Treatment Type: ☒ Lake ☐ Pond ☐ Wetland ☐ Marina ☐ Other

Goal of Aquatic Plant Control:

- ☒ Reduce nuisance algae accumulation
- ☐ Maintain navigational channel for common use
- ☐ Maintain private access for boating
- ☐ Maintain private access for fishing
- ☒ Improve swimming
- ☐ Control of purple loosestrife
- ☐ Control of invasive exotics
- ☐ Other: _____

Nuisance Caused By:

- ☐ Algae
- ☒ Emergent water plants (majority of leaves and stems growing above water surface, e.g. cattails, bulrushes)
- ☐ Floating water plants (majority of leaves floating on water surface, e.g., waterlilies, duckweed)
- ☒ Submerged water plants (leaves and stems below water surface, flowering parts may be exposed, e.g., milfoil, coontail)
- ☐ Other: _____

List Target Plants

Note: Different plants require different chemicals for effective treatment. Do not purchase chemical before identifying plants.

Section V – Chemical Control

Alternatives to Chemical Control:	Feasible?	If No, Why Not?
1. Mechanical harvesting	☐ Yes ☒ No	No Labor Force
2. Hand pulling	☐ Yes ☒ No	
3. Hand raking	☐ Yes ☒ No	
4. Hand cutting	☐ Yes ☒ No	
5. Sediment screens/covers	☐ Yes ☒ No	
6. Dredging	☒ Yes ☐ No	
7. Lake drawdown	☐ Yes ☒ No	
8. Nutrient controls in watershed	☐ Yes ☒ No	
9. Other: _____	☐ Yes ☒ No	

Note: If proposed treatment involves multiple properties, consider feasibility of EACH alternative for EACH property owner.

If you checked yes to any of the alternatives listed above, please explain your decision to use chemical controls:

Section V – Chemical Control (continued)

Trade Name of Proposed Chemical(s)

Reward, Aquastrike, or other Wisconsin-registered diquat product.
Captain or other chelated copper product
Habitat

Method of Application: _____

Will surface water outflow and/or overflow be controlled to prevent chemical loss? ☒ Yes ☐ No

Have the proposed chemicals been permitted in a prior year on the proposed site? ☐ All ☐ Some ☒ None

What were the results of the treatment?

Note: Chemical fact sheets for aquatic pesticides used in Wisconsin are available from the Department of Natural Resources upon request.

Section VI – Applicant Responsibilities and Certification

1. The applicant has prepared a detailed map which shows the length, width and average depth of each area proposed for the control of rooted vegetation and the surface area in acres or square feet for each proposed algae treatment.
2. The applicant understands that the Department of Natural Resources may require supervision of any aquatic plant management project involving chemicals. Under s. NR 107.07, Wis. Adm. Code, supervision may include inspection of the proposed treatment area, chemicals and application equipment before, during or after treatment. The applicant is required to notify the regional office 4 working days in advance of each anticipated treatment with the date, time, location and size of treatment unless the Department waives this requirement. Do you request the Department to waive the advance notification requirement? ☒ Yes ☐ No
3. The applicant agrees to comply with all terms or conditions of this permit, if issued, as well as all provisions of Chapter NR 107, Wis. Adm. Code. The required application fee is attached.
4. The applicant has provided a copy of the current application to any affected property owners' association, inland lake district and, in the case of chemical applications for rooted aquatic plants, to all owners of property riparian or adjacent to the treatment area. The applicant has also provided a copy of the current chemical fact sheet for the chemicals proposed for use to any affected property owner's association or inland lake district.

☒ Check if you are signing as Agent for Applicant.

I hereby certify that the above information is true and correct and that copies of this application have been provided to the appropriate parties named in Section II and that the conditions of the permit and pesticide use will be adhered to.

Dan Wehrle
Signature of Applicant

5/9/2018
Date Signed

All portions of this permit, map and accompanying cover letter must be in possession of the chemical applicator at time of treatment. During treatment all provisions of Chapter NR 107, specifically ss. NR 107.07 and NR 107.08, Wis. Adm. Code, must be complied with, as well as the specific conditions contained in the permit cover letter.

Section VII – WPDES Permit Request

Is WPDES coverage being requested? Refer to http://dnr.wi.gov/topic/wastewater/aquaticpesticides.html for more information.

☐ No: ☐ Already have WPDES coverage until Sept. 2016
☐ WPDES coverage not needed

☑ Yes – complete section VII with signature

Select which permit you are requesting:
☒ WI-0064556-1 Aquatic Plants, Algae & Bacteria
☐ WI-0064564-1 Aquatic Animals
☐ WI-0064581-1 Mosquitoes & other Flying Insects

Indicate WPDES permittee responsible for the pollutant discharge: ☐ Applicator ☒ Sponsor

Do you expect the pest control activity will result in a detectable pollutant discharge to waters of the state beyond the treatment area boundary or a pollutant residual in waters of the state after the treatment project is completed? ☐ Yes ☐ No

If yes, identify the pollutant(s): _____

Are you planning to incorporate integrated pest management principles, as specified in the WPDES permit, into your pest control activity to minimize any pollutant residual or pollutant discharge beyond the treatment area? ☐ Yes ☐ No

Type of WPDES coverage being requested: ☐ One Treatment Site ☐ Statewide Coverage

For informational purposes, select areas of WI for most of your aquatic treatments: ☐ NW ☐ NE ☐ SW ☐ SE

Is WPDES coverage being requested for more than 1 year?
☑ Yes ☐ No If yes, the permittee will remain in "active" WPDES status until a Notice of Termination is submitted.

I hereby certify that I am the authorized representative (as specified in Ch. NR 205.07(1)(g), Wis. Adm. Code) of the pest treatment activity which is the subject of this permit application. I certify that the information contained in this form and attachments is, to the best of my knowledge, true, accurate and complete.

Dan Welsh — Signature of Authorized Representative
Dan Welsh — Printed Name
5/11/2015 — Date Signed

Section VIII – Permit to Carry Out Chemical Treatment (Leave Blank – DNR Use Only)

The foregoing application is approved. Permission is hereby granted to the applicant to chemically treat the waters described in the application during the season of 20 15.

Application fee received?
☒ Yes ☐ No

Advance notification of treatment required?
☒ Yes ☐ No

Complete 6/12/15 12

State of Wisconsin
Department of Natural Resources
For the Secretary

By Susan Graham
Regional Director or Designee

6/12/15 — Date Signed
6/12/15 via email — Date Mailed

Please Note:

If you believe that you have a right to challenge this decision, you should know that Wisconsin statutes and administrative rules establish time periods within which requests to review Department decisions must be filed.

For judicial review of a decision pursuant to ss. 227.52 and 227.53, Wis. Stats., you have 30 days after the decision is mailed or otherwise served by the Department, to file your petition with the appropriate circuit court and serve the petition on the Department. Such a petition for judicial review shall name the Department of Natural Resources as the respondent.

This notice is provided pursuant to s. 227.48(2), Wis. Stats.

To request a contested case hearing pursuant to s. 227.42, Wis. Stats., you have 30 days after the decision is mailed, or otherwise served by the Department, to serve a petition for hearing on the Secretary of the Department of Natural Resources. The filing of a request for a contested case hearing is not a prerequisite for judicial review and does not extend the 30-day period for filing a petition for judicial review.

Chemical Weed Control Area
Chemical Weed Control Area
Area of Cattail Removal