

# Mitchell Lake Association

## Sept. 18, 2014

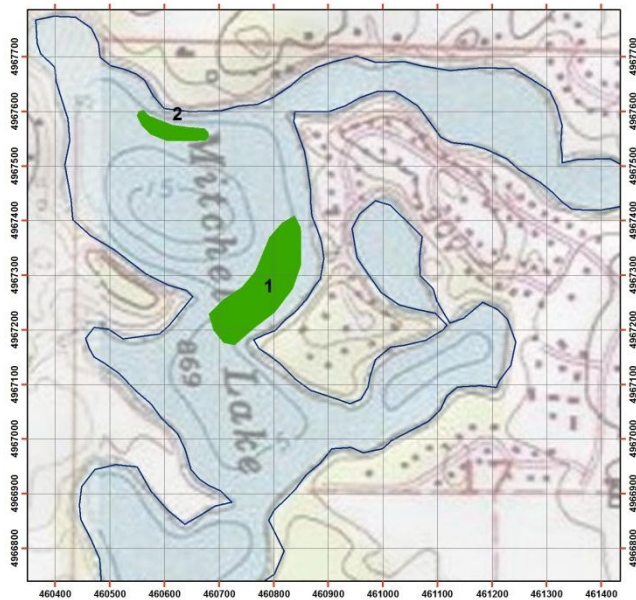


# Harvesting

- DNR requires pre-permit plant delineation
- Blue Water Science – City Contract
- 2013
  - City began contracting for harvesting
  - 6 acres included in permit
  - Focused on heavy growth areas for Curlyleaf Pondweed
- 2014
  - Focus shifted to areas of moderate to heavy growth
  - 20 acres included in permit

# Comparison

2013 Mitchell Lake Curlyleaf Pondweed Harvesting Map

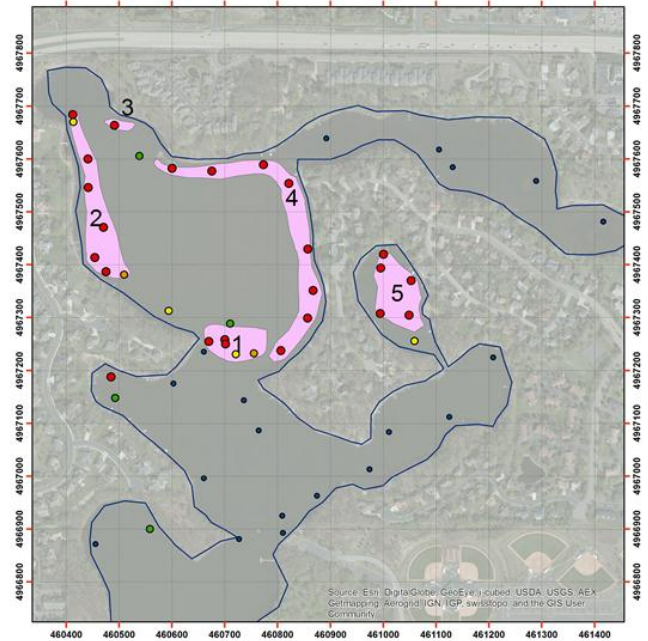


Id	CLP Acres
1	4.4
2	0.9



UTM NAD 83  
Field Data: May 29, 2013  
Map Created: May 30, 2013

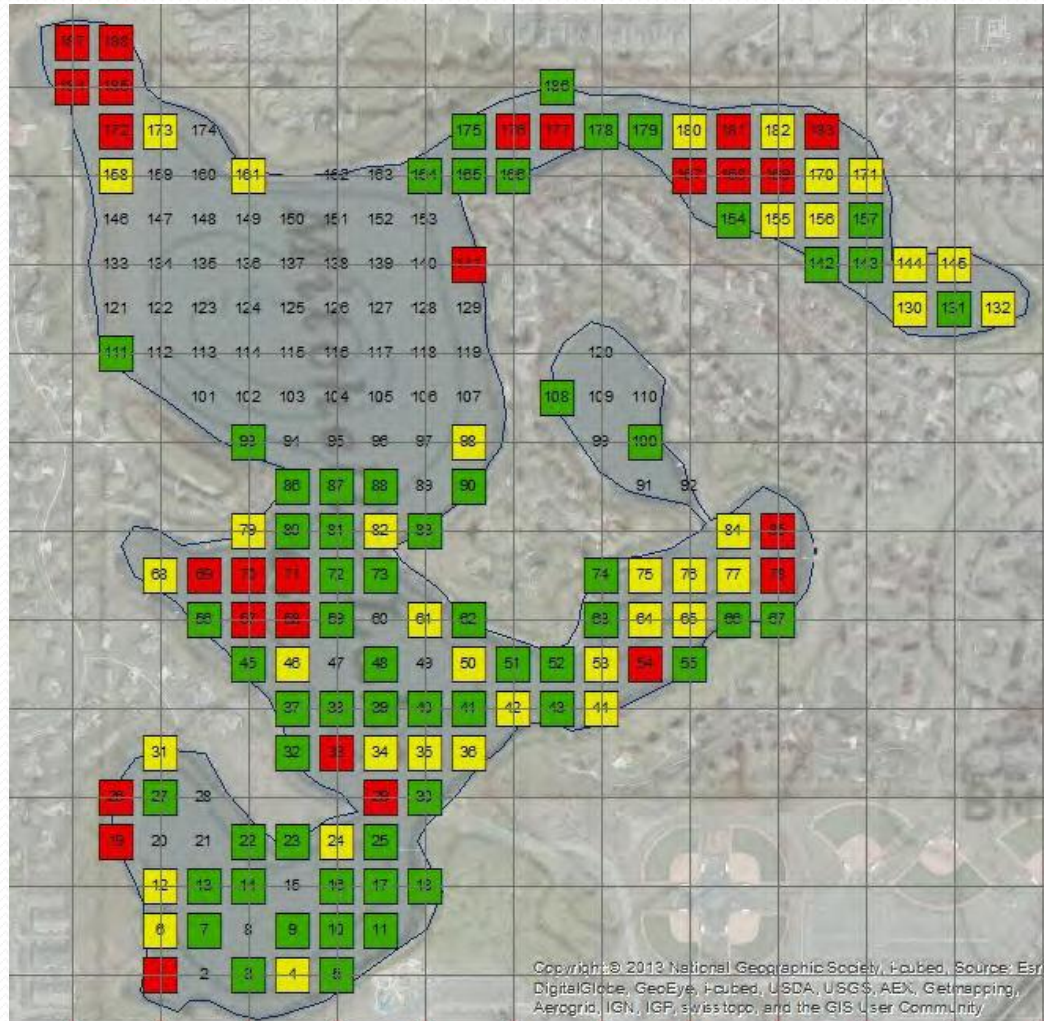
Mitchell Lake Treatment Sites  
June 3, 2014



Id	M14CLPac
1	1.69
2	3.15
3	0.22
4	4.61
5	2.38

UTM NAD 83  
Field Data: June 3, 2014  
Map Created: June 9, 2014

# Native Species Density - 2013



# Water Clarity Summary

1 meter = 3.28 feet

## SECCHI Disc Readings

(Averages per year)

depth in both meters and feet

Lake / Goal (based on data from 2000)		2013	2012	2011	2010	2009	2008	2007	2006	2005	2004	2003	2002	2000	1999	1972 (few data points)
<b>Red Rock Lake</b>	meters	1.94	2.41	2.58	1.49	1.82	1.84		1.21	1.44	1.37	1.71		1.68	1.22	1.05
	feet	<b>6.36</b>	<b>7.91</b>	<b>8.46</b>	<b>4.89</b>	<b>5.98</b>	<b>6.02</b>		<b>3.97</b>	<b>4.71</b>	<b>4.49</b>	<b>5.60</b>		<b>5.50</b>	<b>4.01</b>	<b>3.44</b>
Grade (Met Council)		C	B	B	C	C	C		D	C	C	C		C	C	D
Max. Depth = 16 feet																
<b>Mitchell Lake</b>	meters	1.88	1.52	1.85	1.79	1.56	1.17	1.47	1.12	1.22	1.66	1.40	1.86	1.45	1.18	0.75
	feet	<b>6.15</b>	<b>4.99</b>	<b>6.08</b>	<b>5.87</b>	<b>5.09</b>	<b>3.85</b>	<b>4.83</b>	<b>3.66</b>	<b>4.00</b>	<b>5.46</b>	<b>4.59</b>	<b>6.10</b>	<b>4.74</b>	<b>3.86</b>	<b>2.46</b>
Grade (Met Council)		C	C	C	C	C	D	C	D	C	C	C	C	C	D	D
Max. Depth = 19 feet																
<b>Riley Lake</b>	meters	1.96	1.40	2.35	1.90	1.84	1.69	1.87	2.26	1.99	1.70	1.49	2.02	2.69	1.39	0.90 (1971)
	feet	<b>6.43</b>	<b>4.60</b>	<b>7.72</b>	<b>6.22</b>	<b>6.04</b>	<b>5.56</b>	<b>6.49</b>	<b>7.42</b>	<b>6.53</b>	<b>5.56</b>	<b>4.87</b>	<b>6.63</b>	<b>8.81</b>	<b>4.56</b>	<b>2.95 (1971)</b>
Grade (Met Council)		C	C	B	C	C	C	C	B	C	C	C	C	B	C	D
Max. Depth = 49 feet																
<b>Round Lake</b>	meters	2.48	1.56	2.27	1.80	1.92	1.77	2.07	1.79	1.90	1.34	1.73	1.73			5.00
	feet	<b>8.12</b>	<b>5.11</b>	<b>7.46</b>	<b>5.90</b>	<b>6.30</b>	<b>5.82</b>	<b>6.80</b>	<b>5.86</b>	<b>6.23</b>	<b>4.40</b>	<b>5.66</b>	<b>5.66</b>			<b>16.40</b>
Grade (Met Council)		B	C	B	C	C	C	C	C	C	C	C	C			A
Max. Depth = 37 feet																
(Alum treatment Fall 2012)																
<b>Bryant Lake</b>	meters	1.69	2.6	2.88	2.95	2.66	1.44	1.00	1.25	0.92	0.97		0.98			1.29 (1980)
	feet	<b>5.53</b>	<b>8.55</b>	<b>9.45</b>	<b>9.67</b>	<b>9.23</b>	<b>4.72</b>	<b>3.28</b>	<b>4.08</b>	<b>3.01</b>	<b>3.18</b>		<b>3.21</b>			<b>4.23 (1980)</b>
Grade (Met Council)		C	B	B	B	B	C	D	C	D	D		D			C
Max. Depth = 45 feet																
(Alum treatment in Fall 2008)																
<b>Staring Lake</b>	meters	0.79	0.60	0.71	0.76	0.30	0.50		0.42		0.53		0.54			0.66 (1980)
	feet	<b>2.59</b>	<b>1.98</b>	<b>2.32</b>	<b>2.49</b>	<b>1.00</b>	<b>1.65</b>		<b>1.39</b>		<b>1.97</b>		<b>1.76</b>			<b>2.17 (1980)</b>
Grade (Met Council)		D	F	D	D	F	F		F		F		F			F
Max. Depth = 16 feet																
<b>Lake Average</b>	meters	1.79	1.68	2.11	1.78	1.68	1.40	1.60	1.34	1.49	1.24	1.54	1.59			1.61
	feet	<b>5.86</b>	<b>5.52</b>	<b>6.92</b>	<b>5.84</b>	<b>5.61</b>	<b>4.60</b>	<b>5.35</b>	<b>4.48</b>	<b>4.90</b>	<b>4.18</b>	<b>5.18</b>	<b>4.67</b>			<b>3.83</b>
Grade (Met Council)		C	C	C	C	C	C	C	C	C	C	C	C			D

### Grades:

A = >9.8 ft.

B = 7.2 - 9.8 ft.

C = 3.9 - 7.2 ft.

D = 2.3 - 3.9 ft.

F = <2.3 ft.

# Rebate Program

- [www.edenprairie.org/livinggreen](http://www.edenprairie.org/livinggreen)
- Water Conservation Rebate Programs tab
- WaterSense Program (50% up to \$50)
  - Toilets, faucets, showerheads
- EnergyStar (water conservation)
  - Washing Machines (50% up to \$100)
  - Irrigation System Upgrades (rain sensor) (50% up to \$150)
- Water Quality (50% up to \$1,500)
  - Shoreland Restoration
  - Raingarden Construction
  - Permeable Pavement Installation

# Summary 2000 – 2013

Water Conservation Rebates									
Year	\$ Dispersed	Last Date of Purchase	Total Items	Irrigation Controllers	Toilets	Washers	Dishwashers	Showerhead	Faucets
2000	\$12,011.90	7/31 *	121		50	24	47		
2001	\$12,200.00	12/21 *	124		6	49	69		
2002	\$12,450.00	8/9 *	125		1	56	68		
2003	\$12,150.00	3/29	128		15	48	65		
2004	\$12,450.00	7/6	139		27	84	28		
2005	\$12,700.00	8/8	133		16	90	27		
2006	\$13,000.00	6/13	138		24	96	18		
2007	\$12,799.11	6/22	140		26	77	37		
2008	\$15,450.49	4/12	164	23	28	83	30		
2009	\$14,212.10	4/20	155	11	27	88	29		
2010	\$13,544.96	3/23	184	13	53	92			26
2011	\$15,870.93	6/27	251	9	96	91			55
2012	\$32,009.50	12/31	514	16	205	138		19	136
2013	\$22,657.75	12/31	361	19	149	104		13	76
Totals	\$213,506.74		2677	91	723	1120	418	32	293

\* Date of last rebate check issued

Water Quality Rebates			
Year	\$ Dispersed	Raingarden	Shoreland
2009	\$2,201.70	1	1
2010	\$814.13	2	0
2011	\$2,282.78	2	2
2012	\$6,339.55	5	2
2013	\$4,563.98	3	2
Totals	\$16,202.14	13	7

# Shoreland Rebate

- Within Shore Impact Zone
  - Land located between the OHWL of the lake and a line parallel to it at a setback of 50% of the required structure setback
    - Mitchell Lake = 75 feet
- OHWL is the boundary of the public water that is an elevation delineating the highest water level which has been maintained for a sufficient period of time to leave evidence upon the landscape
  - Mitchell Lake = 871.5 feet MSL
  - Water Level on 9/10/2010 was 871.55
  - Water Level on 8/27/2014 was 871.50
  - High was 874.24 on 6/25/2014



# Program Guidelines

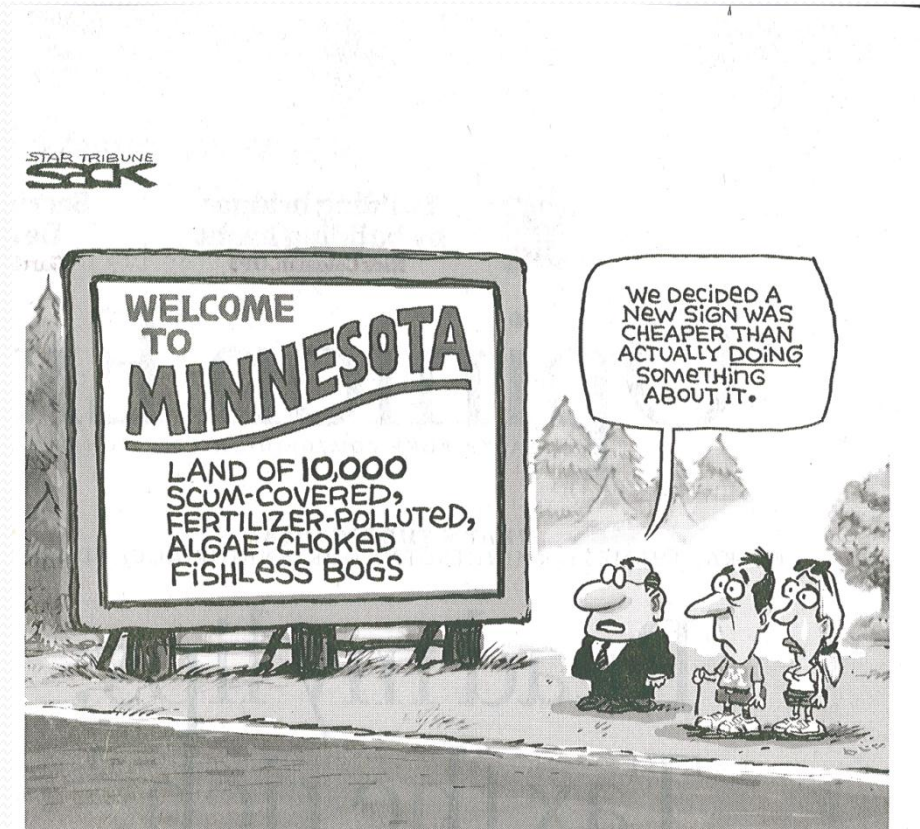
- 50% of project cost up to \$1,500
- Project to be maintained a minimum of 4 years by property owner who applied for the rebate
- 75% of plants from Blue Thumb Program
  - [www.bluethumb.org](http://www.bluethumb.org)
- Inspection required before and after installation
  - Gopher One call required before if a rain garden
- Design assistance not required



reeds and bulrushes

# Vegetation Management Plan Objectives

- Work with RPBCWD to develop a vegetation management plan that:
  - Defines the problems
  - Identifies quantifiable management goals
  - Identifies specific management actions to improve lake conditions



# Plan Process

- Define the issues
- Problem Assessment
- Develop management objectives
  - Are desired outcomes achievable and/or sustainable?
  - Are there competing goals or objectives?
- Evaluate and select management actions
  - What tools are currently available?
  - What are the regulatory restrictions or requirements?
- ***Develop an action plan specific for this lake***

# Resident Survey Results (web)

- Density and extent of submerged aquatic vegetation inhibits recreational use
- Would like to support swimming in deeper areas of the lake, including the public landing and adjacent property
- Navigational access to most areas of the lake
- Fishing opportunities at both open areas of the lake as well as areas adjacent to properties
- Improve aesthetics of the lake including improved water quality, limited filamentous algae blooms and minimal submerged aquatic vegetation matting

# Management Plan – What's Next?

- Manage invasive aquatic plant species (curly leaf, Eurasian water milfoil, filamentous algae)
  - Mechanical harvesting - most areas
  - Herbicide - more restricted but DNR may consider variance
  - Alum – water clarity and phosphorus reduction
- Recreational Use - Limited harvesting or herbicide use
  - DNR regulations
  - Cost?
- Reduction in abundance of coontail
  - Difficult to control and many unknowns in how
  - Long term - need reductions in Nitrogen inputs and export of Nitrogen from the sediments through denitrification
  - Shoreland buffers / raingardens

# Upcoming Events

- City-Wide Open House
  - October 11, 2014 from 11 a.m. – 2 p.m.
- Vegetation Management Plan Presentation
  - Wednesday, October 22, 2014
  - City Hall Heritage Rooms
  - Mitchell Lake @ 6 pm / Red Rock Lake @ 8 pm
- Chamber of Commerce Home, Landscape and Garden Everything Spring Expo
  - Saturday, March 21, 2015 from 9 a.m. – 3 p.m.
- MetroBlooms Raingarden Workshops - 2015
  - [www.metroblooms.org](http://www.metroblooms.org)
- Other ideas? Open to Suggestions



# Questions?

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