

## **Bone Lake Commissioners Meeting**

**Saturday, October 15, 2016 9:00am Georgetown Hall**

### **DRAFT**

Commissioners present:

Bob Murphy

Phil Foster

Alex Chorewycz

Karen Engelbretson

Mike Musial

Brian Masters

Also present:

Cheryl Clemens

Bob Boyd

Meeting was called to order at 9:00 a.m.

**Minutes.** The commissioner meeting minutes from July 9, 2016 were approved as final. Chorewycz/Foster. Carried.

**Treasurer report.** Alex Chorewycz presented the treasurer's report. Approved. Foster/Engelbretson. Carried.  
[The Treasurer's Report is included as part of this pdf.]

**Legal Opinion.** Karen Engelbretson presented the District funding of fireworks legal opinion for discussion. A link to the opinion will be published in an upcoming Bone Lake eNews and in the spring *Bone Lake Newsletter*.

**Annual Meeting.** Karen led the discussion to follow up on the annual meeting held August 13, 2016. It was suggested that the District pay for use of Wilkins dining room for the meeting. Alex Chorewycz will reach out to Steve Bol. Karen will draft a thank you letter to be signed and mailed by Bob Murphy.

**Auditor.** Phil Foster introduced the motion to appoint Mike Belich as auditor for FY 2016-17. Foster/Engelbretson. Carried. Karen will draft a thank you letter on behalf of all commissioners to be signed and mailed by Bob Murphy.

**Grants.** Phil Foster presented a summary of current DNR grants total dollars and balance for the District.  
[The summary is included as part of this pdf.]

**CLP Management.** Cheryl Clemens presented updates on Bone Lake water clarity and CLP treatment and our aquatic plant management plan. [Cheryl's presentation is included as part of this pdf.] Our current Aquatic Plant Management Plan outlines activity for 2015-2017. We need an updated plan for 2017-2019.

**Newsletter printing.** Phil Foster suggested we reduce extra copies distributed at resorts and stores from 200 to 150. Extra copies cost about \$1.25 each. The extras are shipped from the printer to Bob Boyd who distributes them.

**AIS Education and Planning.** Motion to submit an Aquatic Plant Management Planning Grant application. Foster/Chorewycz. Carried.

**AIS Education grant.** We have the option to apply for \$4000 with 75% funding per landing, or \$4000 per set of landings with 75% funding. Motion to apply for \$4000 per set of landings. Foster/Masters. Carried.

**Old Business.** Suggestion to raise newsletter ad rates discussion. Ad rates for 2016 were raised to \$60 per year for two ads, spring and fall issues, from \$40 in 2015. We will keep ads at current rates for 2017 and raise to \$100 per year for two ads, spring and fall issues, in 2018.

**2017 Meeting dates**

<b>April 8</b>	<b>Spring meeting</b>	Georgetown Hall, 9 a.m.
<b>July 8</b>	<b>Budget meeting</b>	Georgetown Hall, 9 a.m.
<b>August 12</b>	<b>Annual meeting</b>	Wilkins, 9 a.m.
<b>October 14</b>	<b>Fall meeting</b>	Georgetown Hall, 9 a.m.

Motion to Adjourn, 11:50 a.m.  
Foster/Engelbretson. Carried.

**Bone Lake Management District**  
**Commissioners Meeting**  
**Georgetown Hall**  
**Saturday, Oct 15, 2016 9:00am**

**Agenda**

Call to order

Roll call

Approve minutes of last meeting on July 9, 2016

Treasurers' Report

Legal Opinion regarding District financing of fireworks

Annual Meeting followup – Karen Engelbreteson

Auditor for FY 2016–17 – Phil Foster

Water Clarity Update – Cheryl Clemens

CLP treatment update and plans – Bob Boyd and Cheryl Clemens

Role of District for Navigation Channels – Bob Boyd and Cheryl Clemens

Old Business

New Business

Adjournment

**Current Wisconsin DNR Grants for the Bone Lake Mgmt District**

as of September, 2016,

		<b>Grant Total</b>	<b>Grant Balance</b>
<b>Bone Lake Lake Mgmt Plan ( April 15, 2015 to June 30, 2018)</b>	<b>Grant LPT-475-15</b>	\$175,020	
Purpose: Improve water clarity, fisheries, wildlife and natural beauty			
Payment received to date		\$17,114	
Remaining grant balance		\$157,906	\$157,906
<b>CLP Control grant ( 2/1/15 to 12/31/17)</b>	<b>Grant ACEI-171-15</b>	\$55,275	
Purpose: 50% funding to spray 30 acres of Curlyleaf Pondweed			
Payment received to date		\$15,081	
Remaining grant balance		\$40,194	\$40,194
<b>AIS Education grant ( 10/1/11 to 12/31/16)</b>	<b>Grant AEPP-319-12</b>	\$46,165	
Purpose: Aquatic Invasive species prevention and detection e.g. Clean Boats Clean Waters			
Payments received based on expenditures		\$38,158	
Remaining grant balance		\$8,007	\$8,007
<b>Internal Load Study grant (2/12/15 to 12/31/17)</b>	<b>Grant LPL-1568-15</b>	\$24,669	
Purpose: Better understanding of impact to water clarity from the release of phosphorus from the lake sediment and also fish/wildlife monitoring			
Grant Advance:		\$12,564	
Remaining grant balance		\$12,105	\$12,105
<b>Healthy Lakes grant (4/15/16 to 12/31/17)</b>	<b>LPT 521-16</b>	\$13,972	
Purpose: Install thirteen 10' by 35' native shoreline plantings			
Grant Advance:		\$0	
Remaining grant balance		\$13,972	\$13,972

# INCOME STATEMENT AND APPROVED FYE 2017 BUDGET

## BONE LAKE MANAGEMENT DISTRICT

FYE-2016 - BUDGET AND ACTUAL 10/1/2015 THROUGH 9/30/2016 AND APPROVED BUDGET FISCAL YEAR ENDING 9/30/2017-FOR COMMISSIONERS MTG-10/15/2016

	Budget FYE 2016 10/1/2015 thru 9/30/16	Actual Income/Expense 10/1/2015 thru 9/30/16	Approved Budget - FYE 2017 10/1/2016 thru 9/30/17
Town of Georgetown and Bone Lake	\$ 55,600.00	\$ 55,615.55	\$ 63,616.00
Frandsen Bank-Interest	\$ 21.00	\$ 22.92	\$ 21.00
Newsletter Ads	\$ 2,100.00	\$ 2,100.00	\$ 2,100.00
Polk County-Lottery Credit	\$ 400.00	\$ 384.45	\$ 384.00
Grants	\$ 70,000.00	\$ 45,048.63	\$ 55,000.00
Other-maps-owner cost share & Misc.	\$ 100.00	\$ 1,903.45	\$ 500.00
<b>Total Revenue</b>	<b>\$ 128,221.00</b>	<b>\$ 105,075.00</b>	<b>\$ 121,621.00</b>
<b>Expenditures</b>			
<b>Lake Improvements</b>			
Aquatic Plant Management (incl CBCW)	\$ 50,000.00	\$ 54,686.82	\$ 50,000.00
Consulting	\$ 3,000.00	\$ 3,029.35	\$ 3,000.00
WDNR-Rtn Overpayment		\$ -	
<b>Lake Management</b>			
Watershed	\$ 15,000.00	\$ 687.50	\$ 5,000.00
Waterfront runoff	\$ 50,000.00	\$ 23,523.41	\$ 40,000.00
Evaluation and Studies	\$ 10,000.00	\$ 6,871.20	\$ 15,000.00
Wildlife and Natural Beauty	\$ 3,500.00	\$ 843.50	\$ 3,500.00
Fisheries	\$ 1,500.00	\$ -	\$ 1,500.00
Communications/Education/Recognition	\$ 4,000.00	\$ 763.95	\$ 6,500.00
Sub- Total Lake Mgmt.	\$ 84,000.00	\$ 32,689.56	\$ 71,500.00
<b>Total Lake Improvements</b>	<b>\$ 137,000.00</b>	<b>\$ 90,405.73</b>	<b>\$ 124,500.00</b>
<b>Public Safety</b>			
Buoy Maintenance	\$ 5,000.00	\$ 3,245.00	\$ 5,000.00
Safety Patrol	\$ 2,500.00	\$ -	\$ -
<b>Total Public Safety</b>	<b>\$ 7,500.00</b>	<b>\$ 3,245.00</b>	<b>\$ 5,000.00</b>
<b>Information and Education</b>			
Newsletter	\$ 7,500.00	\$ 8,371.05	\$ 8,000.00
Dues	\$ 500.00	\$ 830.00	\$ 750.00
Website	\$ 500.00	\$ 142.00	\$ 1,000.00
Meetings/Workshops	\$ 1,000.00	\$ 805.14	\$ 1,000.00
<b>Total Information and Education</b>	<b>\$ 9,500.00</b>	<b>\$ 10,148.19</b>	<b>\$ 10,750.00</b>

**Administration**

Insurance	\$	2,700.00	\$	1,806.00	\$	3,000.00
Donations/Subscriptions	\$	1,000.00	\$	1,000.00	\$	1,000.00
Misc office expense	\$	750.00	\$	139.98	\$	750.00
<b>Total Adminstration</b>	<b>\$</b>	<b>4,450.00</b>	<b>\$</b>	<b>2,945.98</b>	<b>\$</b>	<b>4,750.00</b>

<b>Total expenditures</b>	<b>\$</b>	<b>158,450.00</b>	<b>\$</b>	<b>106,744.90</b>	<b>\$</b>	<b>145,000.00</b>
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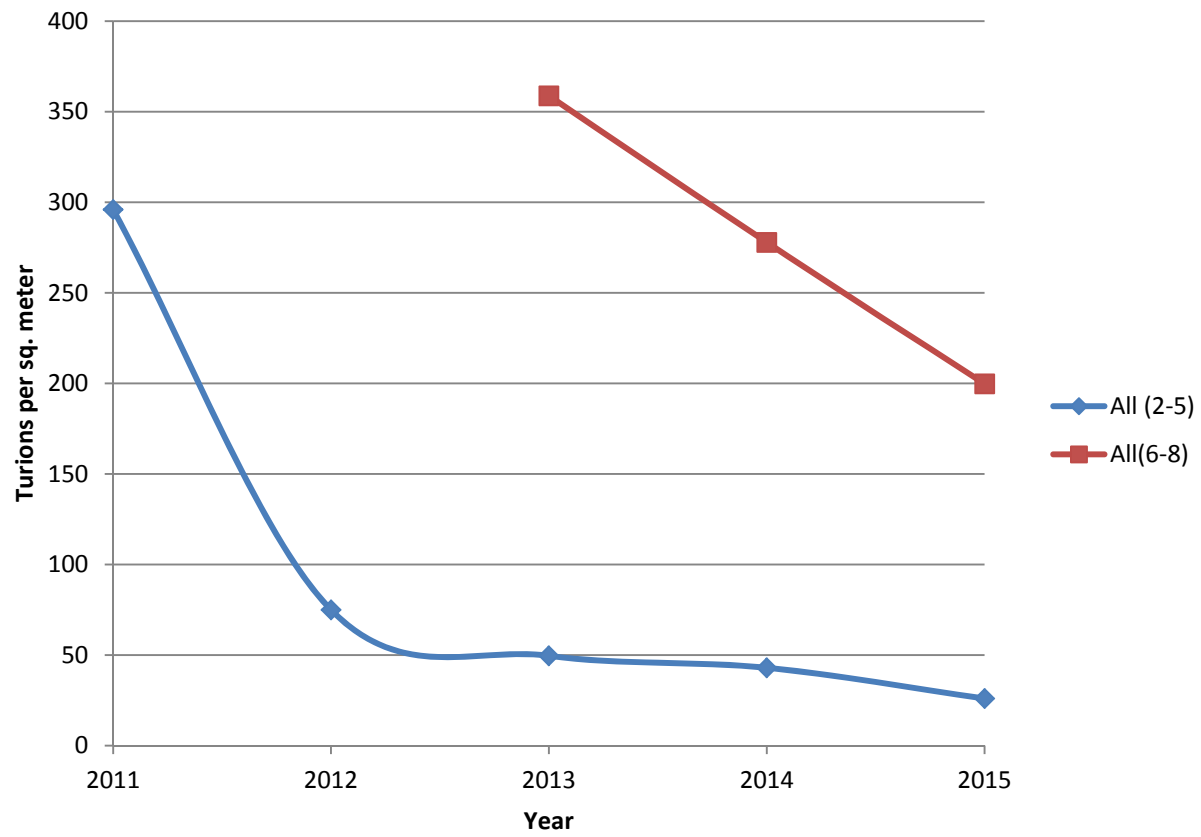
<b>Beginning Cash Balance</b>	<b>\$</b>	<b>229,170.31</b>	<b>\$</b>	<b>229,170.31</b>	<b>\$</b>	<b>227,500.41</b>
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<b>Ending Cash balance</b>	<b>\$</b>	<b>198,941.31</b>	<b>\$</b>	<b>227,500.41</b>	<b>\$</b>	<b>204,121.41</b>
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**Cash Balance - 9/30/2016**

Checking	\$	73,230.83	bal book to bank-9/30/16
Money Market Savings	\$	154,269.58	bal book to bank-9/22/16
<b>Total</b>	<b>\$</b>	<b>227,500.41</b>	

### Mean Turion Density 2011-2015



Updates:  
Water Clarity  
Curly Leaf Pondweed  
Aquatic Plant Management

Cheryl Clemens



# Water Clarity: Driven by Phosphorus



# Nutrient Loading

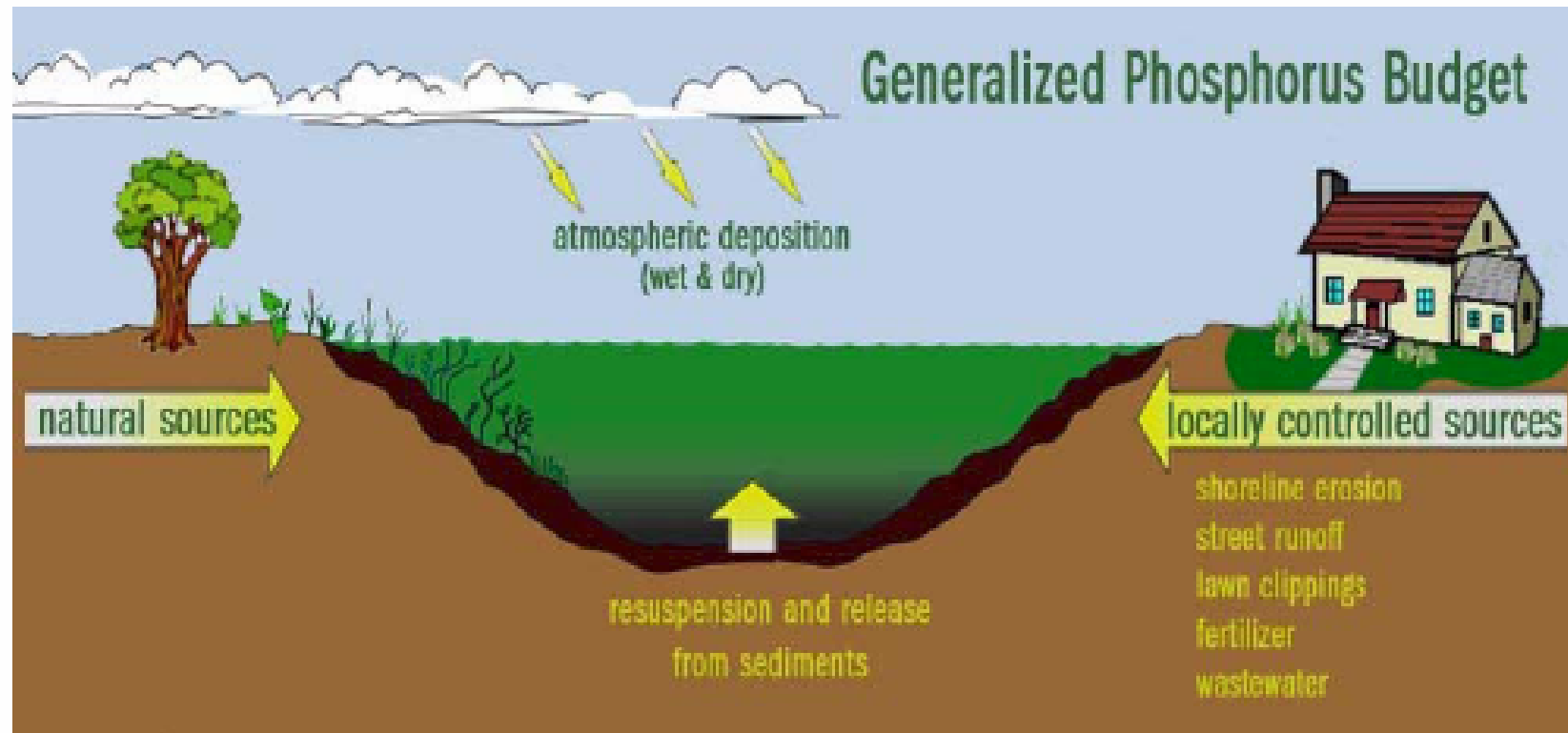


1 pound of phosphorus

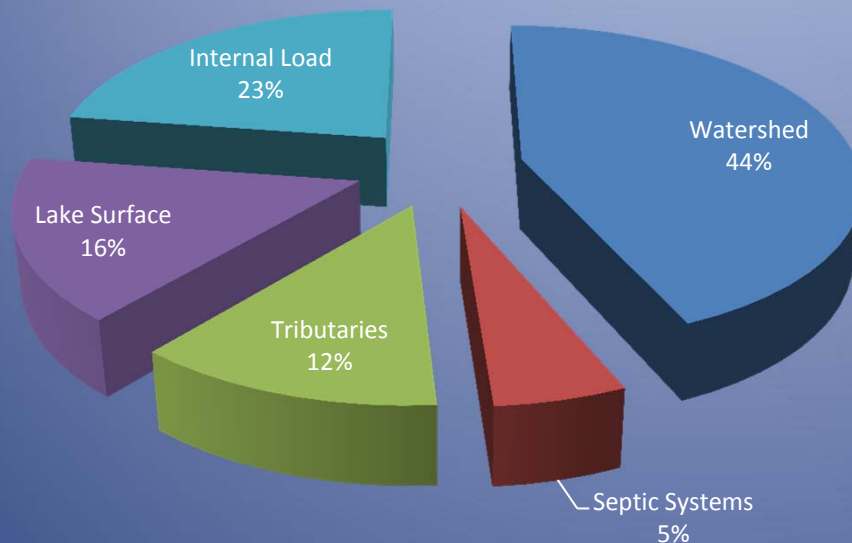


500 pounds of algae!

## Generalized Phosphorus Budget



## Bone Lake Phosphorus Loading



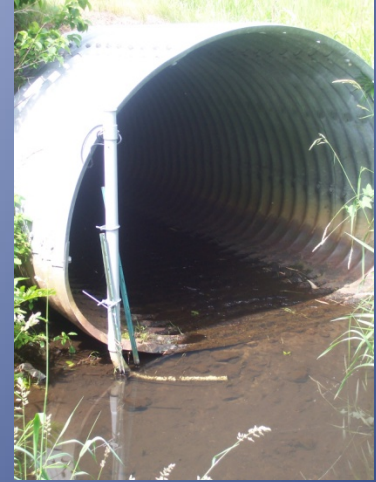
Still learning about internal load

Largest component of watershed  
P Loading is from residential  
lands



# External Load Sources

- Tributaries - Prokop Creek, NW Tributary
- Watershed and Waterfront - residential & agricultural lands
- Precipitation
- Septic



# Goal Improve Bone Lake water clarity.

## Objectives

A. In-lake average TP 30 ppb. (21% reduction)

B. Reduce total phosphorus (TP) loading from external sources by 13%

- Residential Lots: 25% of residential lots by 50%
- Tributary Loading by 10%
- Watershed Loading by 12% (33 kg)
- CLP Beds reduced to 20 acres
- Septic Systems upgraded (50)

# Plan for 2015-2017

## PLANNED

- Waterfront
  - Site visits (20/year)
  - Installations (5)
  - 10X35s (3-4)
- Septic upgrades (5)
- Watershed

## ACTUAL

- Waterfront
  - Site visits 2015 (17) 2016 (15)
  - Installs 2015 (3) 2016 (1)
  - 10X35s 2015 (2) 2016 (8)
- Septic 2015(1) 2016 (1)
- Watershed
  - 2016: Thompson/McCarty Stream Stabilization

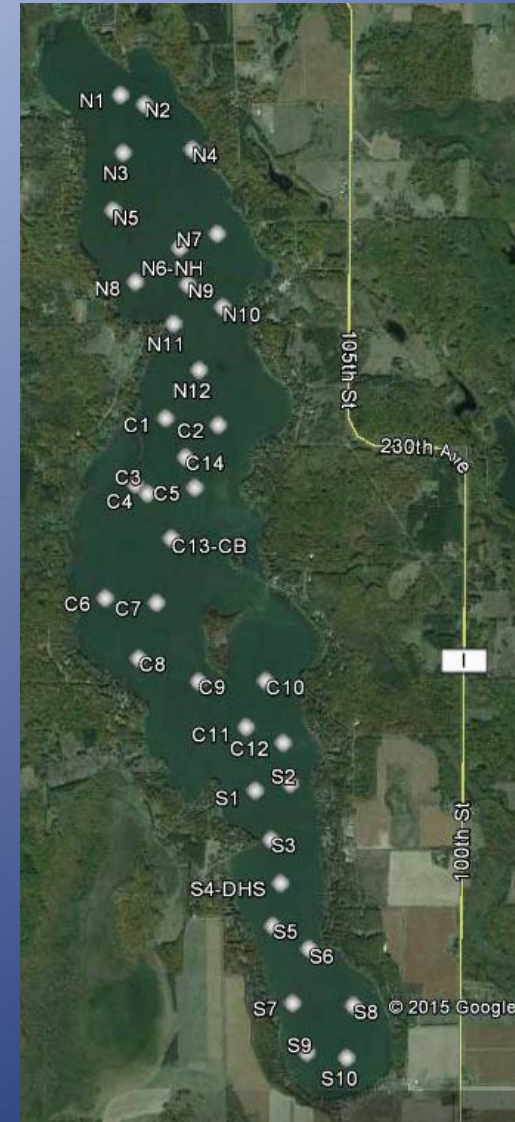
# Internal Load Study

*Where are Bone Lake  
sediments devoid of oxygen?*

Oxygen profiles

*When does the lake mix and in  
what area?*

Temperature profiles





# Internal Load Study

*How much P is released to grow algae?*

In-lake phosphorus sampling

*What is the potential for Bone Lake sediments to release phosphorus?*

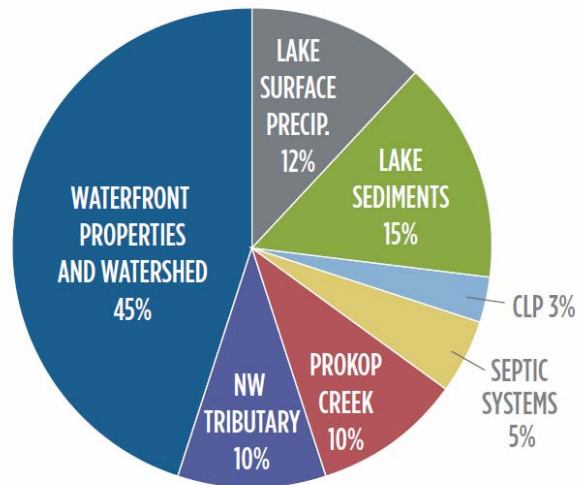
Laboratory sediment phosphorus release (2017)



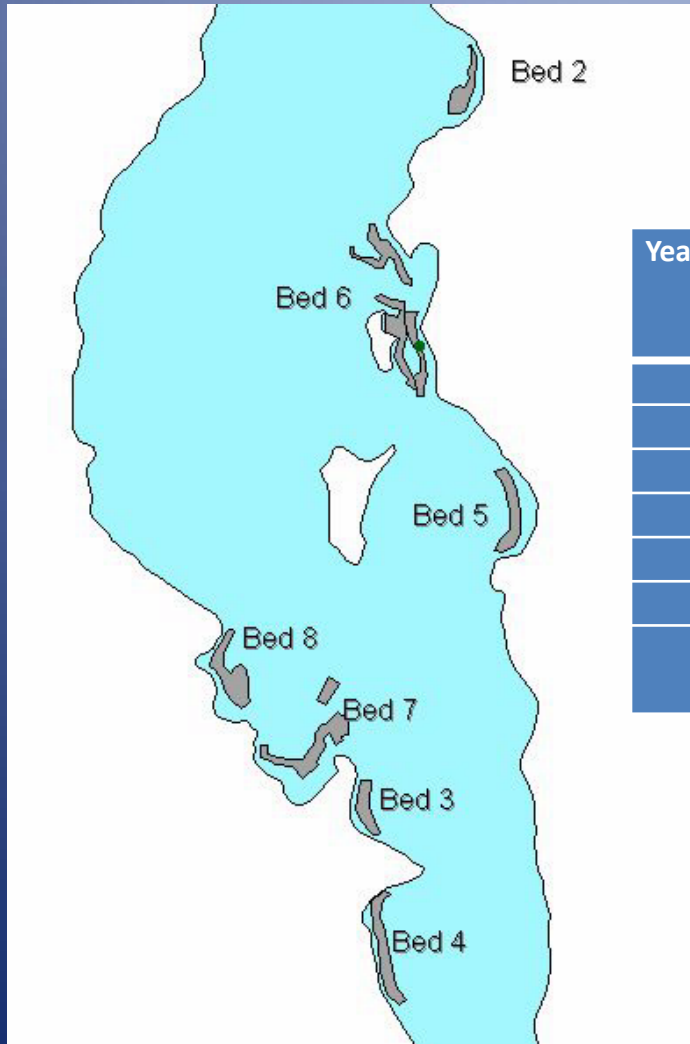
*Does our lake phosphorus budget change?*

*What can be done about internal load?*

*Phosphorus loading  
to Bone Lake by  
source*



# Curly Leaf Pondweed

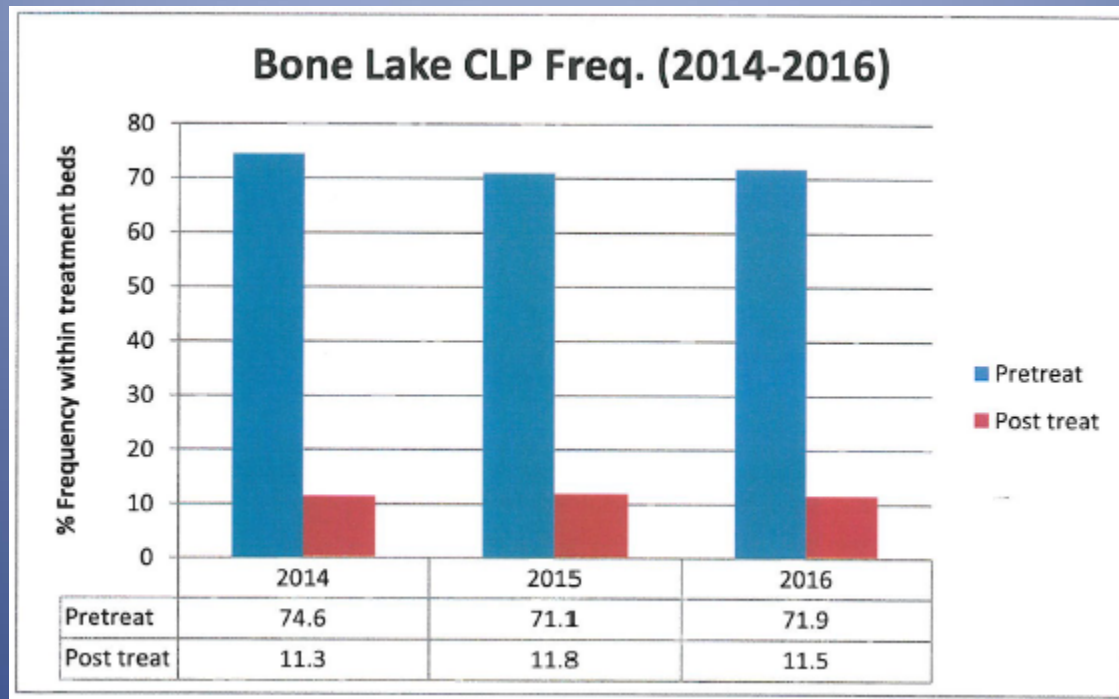


## *Curly Leaf Pondweed Treatment History*

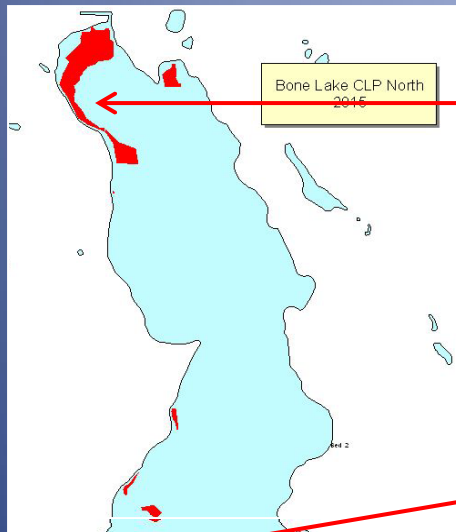
Year	Acres Treated	Frequency decrease pre to post treatment	Total Acres Mapped
2010	15	38%	46
2011	13	19%	56
2012	13	72%	68
2013	31	78%	48
2014	30	64%	NA*
2015	30	60%	49.5
2016	30	60% (71.9% to 11.5%)	38 +10 (lower density)

Treatment Cost 2016: \$29,200  
 Monitoring Cost 2016: \$3,920  
 50% Grant through 2017

# CLP Reductions



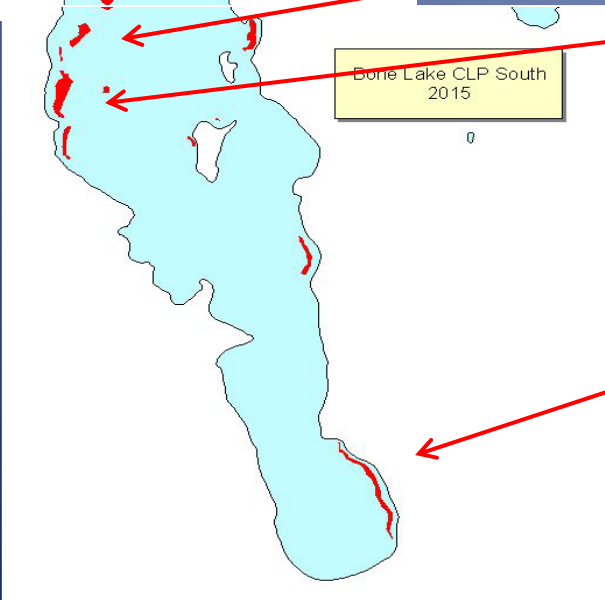
# CLP New Treatment Areas?



Wild Rice Area –  
no treatment



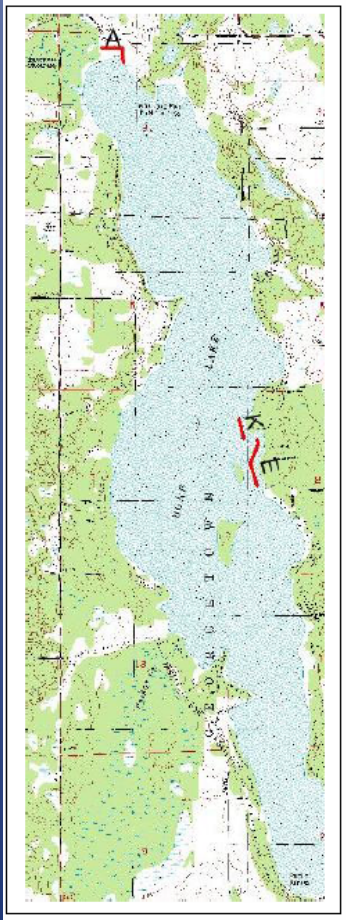
2006 Wild Rice



Moderate Drop-off (like  
bed 7 and 8)

Steep Drop-offs

# What About Navigation?



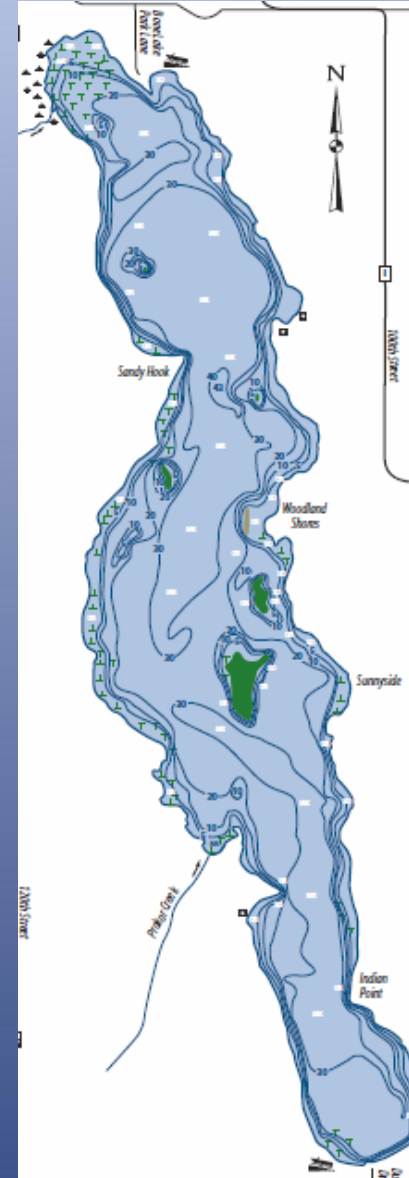
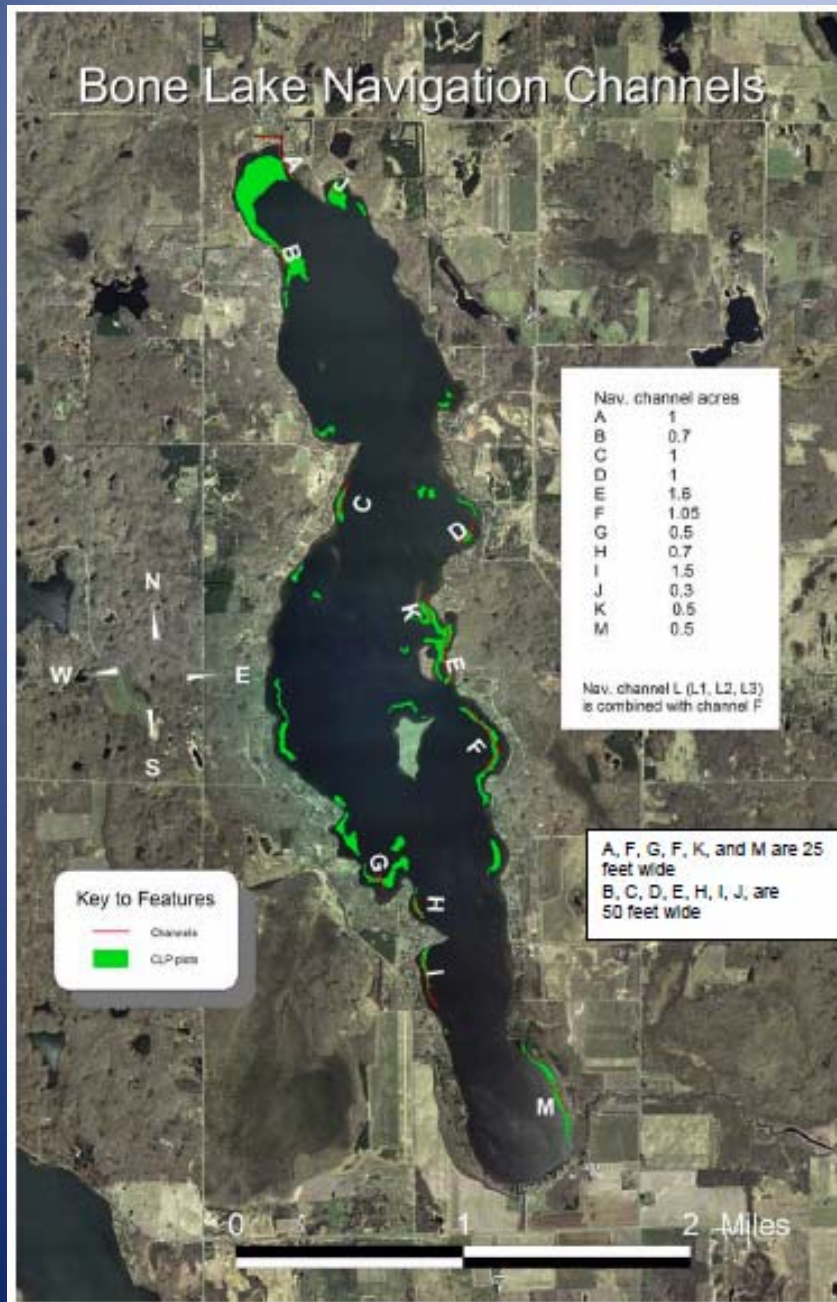
## Navigation Channels through Native Plants

- High Threshold for Treatment: Severe Impairment
- Chemical or Harvesting

Aquatic Plant Management Plan 2013  
(update 2018)

CLP Channels (2009-11)





2008 APMP

## shore conveyors



What about  
Harvesting?

## trailer conveyors





# Harvesting

- Advantages

- No chemicals used
- No restriction on use following harvesting
- Plants are removed from lake (but insignificant TP)
- Employ a local person

- Disadvantages

- Contract harvesting not available or a good idea
- Generally more expensive
- Depth limitations – only to 3 feet or more
- Repeat “mowing” needed
- Drift of plant fragments
- Incidental impacts (fish, macroinvertebrates)

# What About Harvesting?

## Example Costs: Balsam Lake

- Harvester: \$133,820
- Trailer: \$17,550
- Conveyor: \$22,425

Less grant (\$60,000 – need 30 acres)

## Additional costs

Operation: about \$10,000/year

Apple River PRD = \$20,000/year

Truck, Storage Building,

Transport Barge?

