



Devils Lake Water Improvement District

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www.DLWID.org

Quick Look:

- Swearing In
- Topographic and Hydrologic Survey
- Grass Carp Submittal

AGENDA

2013 July 11

Regular Meeting: 6 pm, Lincoln City, Council Chambers
801 SW Hwy 101, 3rd Floor

- I. Swearing in of Board Members: Green & Skirvin 6pm
- II. Election of Officers
 - a. Chair, Vice Chair, Treasurer
- III. Regular Meeting Date/Time/Place
 - a. 2nd Thursday, 6pm, Lincoln City Council Chambers, City Hall, 801 SW Hwy 101
- IV. Consent Agenda
 - a. Minutes of the Previous Meetings
 - b. Financial Report
- V. Unfinished Business (Agenda Support Item A)
 - a. The Devils Lake Plan
 - i. Septic Tank Revitalization Program (Seth Lenaerts)
 - ii. Save our Shoreline Campaign (Seth Lenaerts)
 - iii. Vegetation Management
 - iv. Sewer (Brian Green)
 - b. Communications Report
 - c. Safety Report
 - d. MidCoast TMDL
 - e. East Devils Lake Road
 - f. Policy Updates
 - g. Internship (Michelle Audie)
 - h. Water Quality
- VI. New Business
- VII. Non-agenda Items
- VIII. Public Comment
- IX. Board Comments & Announcement
- X. Adjournment

Meetings of DLWID are handicapped accessible under the ADA.

If special accommodations are needed, please contact the District Office at (541) 994-5330 prior to the meeting.

Robertson, Lenaerts & Audie

I. Unfinished Business

a. The Devils Lake Plan

i. Septic Tank Revitalization Program (Lenaerts)

The Lincoln City Council will discuss septic tanks at their Monday, July 8 City Council meeting. The agenda and packet materials should be available by Friday, July 5. The Council packet can be found on the City website. Council meetings like the District's are streamed live and you can also find a link at this website. <http://lincolncityor.igmp2.com/citizens/default.aspx>

ii. Save our Shoreline (SOS) (Lenaerts)

SOS Video: Cody provided me a first draft of the SOS video, he still had some shots that he needed to get. Paul, Michelle, Joanne Daschel, and I met with Cody and did some shooting to help fill in those holes. Cody thinks he now has everything that he needs. I am just waiting for a draft from him that I can provide feedback on and we will go from there.

iii. Vegetation Management

Grass Carp: (Robertson)

- Engineering Study: (Robertson) I have completed the Engineering Study, titled "Topographic and Hydrologic Maps of the Devils Lake Watershed: 1955 to 2013". This report will serve our application for Grass Carp. The document includes a series of maps from 1955 to 2013 and describes their intended use which is identification of surface waters in the watershed for potential fish control structures. I have included two separate correspondences from ODFW Fish Biologist Robert (Bob) Buckman detailing why there currently are not any fish control structures on Devils Lake, nor why there is likely cause for such even with the potential for new introductions of grass carp.

Completed: June 27, 2013.

Available: <http://www.dlwid.org/Research/2013-Robertson.pdf>

- **Stocking Schedule:** Task III: Develop Recommendations for the Reintroduction of Grass Carp into Devils Lake. *Anticipated Completion Date:* July 19, 2013
- **Outreach Campaign:** I have completed a FAQ for the Grass Carp and a one page sample letter for those seeking to write to the commission on our behalf. We have had 66 respondents to our Grass Carp Survey and of those approximately 3/4 are willing to play some direct role. As soon as we know the date we will be in front of the Commission we will rally their support. Additionally we will continue to provide opportunities for people to engage seeking additional supporters.








FAQ & Sample Letter:

http://www.dlwid.org/Projects/Vegetation_Management/FAQ_Grass_Carp_Devils_Lake.pdf

Outreach Readiness: Initially completed by July 3, 2013 and ongoing until presentation

5

* Would you be willing to support the District in its pursuit of sterile Grass Carp?
 (Please select all that apply)

Answer	0%	100%	Number of Responses	Response Ratio
Yes, I would be willing to sign a petition to the Oregon Fish and Wildlife Commission.			46	74.1%
Yes, I would be willing to write a letter to the Oregon Fish and Wildlife Commission.			22	35.4%
Yes, I would be willing to testify before the Oregon Fish and Wildlife Commission.			12	19.3%
Yes, I would be willing to make phone calls on behalf of the District.			9	14.5%
Yes, I would be willing to find friends and neighbors to also support the District on this important project.			16	25.8%
No thank you.			8	12.9%
Other View all			4	6.4%
Totals			62	100%

[View comments \(15\)](#)

- **Commission Submission:** Our consultant has notified ODFW of our intent to submit an appeal to the rules governing grass carp in Devils Lake and in that notification has asked that we may be offered a chance to present to the Commission at their October 4, 2013 meeting. The actual submission will be sent to the board for your review a week prior to the 19th, any comments should be returned to me, which I can compile for the consultant to finalize the document. After that the Consultant will submit to the Commission. *Anticipated Submission Ready Date:* July 19, 2013

iv. **Sewer** (Director Green)
Direct Link to Engineer Report:

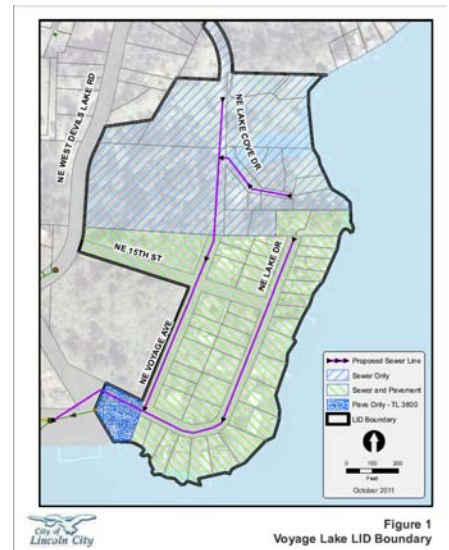
http://www.dlwid.org/Projects/Sewer/Voyage_LID.pdf

b. **Communications Report** (Lenaerts & Audie)

- **KBCH Good Morning Wake Up Show:** This program has aired weekday from 6-8 am on KBCH am 1400. The District has had a standing interview spot on the **THIRD** Tuesday of the Month from 7:30 – 8:00 am. Paul and Michelle are on deck for this month.
- **Internet Streaming:** Meetings the DLWID are now available for live streaming and/or recorded streaming on the internet. The internet feed can be accessed via the City's website: <http://www.lincolncity.org/> by clicking on Agenda, Packets & Video or from the following link: <http://lincolncityor.iqm2.com/citizens/default.aspx>
- **Government Access Channel 4:** The District's monthly meetings continue to be broadcast live and throughout the month repeatedly airs. This channel is available for Charter subscribers.
- **Grass Carp Questionnaire:** This was created and made available through the Listserv in spring and has been advertised on Facebook and Twitter the week before which attracted approximately a dozen responses.
[Take it online!](#)
- **Facebook & Twitter:** The District uses these social media components to reach the general public periodically.
- **Devils Lake Revival:** July 20 from 10 am-2 pm at Regatta Grounds.

Watch the Video on You Tube:

http://youtu.be/sQzEDj_IOW4



We are just over a week away from the Devils Lake Revival, which will take place on Saturday, July 20 from 10am-2pm at Regatta Park in Lincoln City.

The focus of the last month has been promotion. We have ads in the News Guard, News Times, Oregon Coast Today, Salem Weekly, and radio ads on KYTE (102.7), KBCH

(1400), and KCRF (97 & 98 FM). We will also be promoting on What's Going on Lincoln City with Karen Richards on KCUP (1230am and 100.7FM). This is in addition to posters, and using the listserv. Advertising also includes a banner on City Hall.

The event itself is looking to be pretty fun this year!

- Live music by Anton Mizerak and the Schooner Creek String Band
- Food provided by BFEY
- Tigersharks will kick off the event by SUPing across the lake
- Over a dozen educational and agency booths
- Art projects by Let There Be Arts
- Face Painting by Dan the Magic Man
- In water safety demonstration by NLFR (based on availability)
- Kids educational activities
- Prizes! One World Soccer Ball, fishing poll, Frisbees, and of course a kayak
- Pontoon boat tours
- Kayak tours
- Stand up paddle board lessons and rentals
- Water Polo match

I have also included the budget for the event. Although we have budgeted for the event, we have yet to allocate the funds, as the board had requested to review the costs first. Therefore below is the Revival budget. As you can see the District budgeted \$3,000 for the event, and we also received a grant from the Visitor and Convention Bureau for \$3,500. The black font in the **Actual Spent** column refers to costs that are set and the blue font symbolizes estimates.

2013 Devils Lake Revival Financials

Financial Contributors	Amount	
Devils Lake Water Improvement District (Budgeted)	\$3,000	
Visitor and Convention Bureau Grant	\$3,500	
Total	\$6,500	
Expenditure	Proposed Amount	Actual
Music		
(Band 1) Anton Mizerack	400	250
(Band 2) Schooner Creek String Band	200	100
Ads		
Newsguard	350	303
Newstimes	350	274

Salem Weekly	350	500
Oregon Coast Today	400	343
KBCH	300	300
Revival Posters	300	200
T-shirts	175	175
Video Promotional Ad	250	250
Friday Flyer	10	10
Misc Advertising	100	100
Activities		
Signage parking etc	30	30
Water polo goals	100	100
Tents	200	0
Art projects	0	50
Face painting	0	60
Prizes		
Kayak	400	450
Additional Prizes	100	80
Food		
Volunteer Food	50	50
Bio degradable cutlery	80	66
Boat Rental		
Pontoon	500	500
Total Costs	4645	4191

As the money for the tent has already been allocated, the board then simply needs to make a motion to allocate \$4500 for the Revival from the Public Relations Fund.

One thing to keep in mind is that when we passed our annual budget, we included the VCB grant for the Revival as revenue, but we did not add it to the Revival expenditures side. Therefore we had originally only budgeted \$3,000 which we had expected to be our contribution for the Revival instead of \$4,500 which is going to be the actual cost, as the VCB grant was used to subsidize the cost to us, but also expand on marketing and activities.

Therefore, we just have to keep in mind that we will be pulling and \$1,500 from the Public Relations fund that had theoretically been intended for other projects. The Public Relations account has \$19,000 in it so we can easily take that \$1,500 out now, but we may have to prioritize some of the items in that account if we end up doing everything that is being budgeted for.

c. Safety Report (Robertson) Safety is no accident! No incidents.

d. MidCoast TMDL (Robertson)

Department of Environmental Quality (DEQ) has begun the planning process for developing an Implementation Ready - Total Maximum Daily Load (IR-TMDL) for 303(d) listed waterbodies in the Oregon Mid-Coast Basin. The initiation of this TMDL process has been a long-time in the works and the process itself will be lengthy stretching over the next 18 - 20 months. Devils Lake is listed for Weeds/Algae, Chlorophyll a and pH and Thompson Creek is listed for fecal coliforms, and thus as a local government we have been invited to participate. Notably, temperature listings are also proposed by EPA for the lake and one of its tributaries. Representatives from local, state and federal government, special districts, Tribal Nations, private industry, forestry, agriculture, conservation, NGOs, watershed councils, landowners, and others were also identified.

- We have created a web presence under the Project Page for the TMDL process. <http://www.dlwid.org/Projects.html#TMDL>
- Links to the DEQ's website are posted below.
<http://www.deq.state.or.us/WQ/TMDLs/midcoast.htm>
<http://www.deq.state.or.us/WQ/TMDLs/midcoastLSAC.htm>

Stakeholder Meeting Highlights: No Meetings since our last DLWID Meeting.

Bacteria Technical Working Group: No meeting since last update.

e. East Devils Lake Road (Robertson) No new updates as the grant application review period is still ongoing for all the submissions.

Downloads:

http://www.dlwid.org/Projects/EDLR/E_DLR_Feasibility_Study-2009-08-31.pdf

http://www.dlwid.org/Projects/EDLR/E_DLR_Alternatives_Analysis_Summary_2012-10-19.pdf



f. Policy Updates: The District is proposing updates and additions to its Policy Manual for the following items: Proposed changes will be made available on a

time available basis, and carried over to subsequent meetings with all updates slated for completion by the August 2013 meeting. No updates for July.

- Personnel Policy/Manual
- **Mandatory Reporter Policy (Completed: May 2013)**
- Safety Policy
- Financial Policy
- Records Policy
- Board Duties and Responsibilities
- MSDS
- Employee Training
- Light Duty Return to Work

g. Internship: (Audie) The first week I joined with the District I reviewed the safety and laboratory procedures for water quality analysis and bacteria monitoring. Paul has shown me how to properly collect samples from the lake for laboratory analysis. We have also been doing water quality monitoring at the access points around the lake on a weekly basis. In addition, we have started lake outreach on a weekly basis. I am learning to evaluate HABs blooms and also to educate others on the concerns of cyanobacteria growth. I recently designed the advertising poster for the Devils Lake Revival on July 20th. I am currently working on poster outreach materials for the Devils Lake Revival and also on quarterly newsletter assignments. For the summer newsletter I began two new components for the newsletter: a featured invasive species spotlight and an article titled "Limnology 101."

h. Water Quality Monitoring:

E. coli monitoring is in its 8^h week. Readings in the lake have continued to be low. Thompson Creek remains to be a hot spot with elevated readings. D River has remained low, but typically has become elevated in the later half of the summer when discharge to the D River slows, dilution then reduces and tourism increases (can lead to more bird feeding and displacement of sea gulls from beach).

HABS monitoring is showing the beginning of a bloom in the lake concentrated along wind swept shores. Extreme heat and long days of sunshine typically drive blooms which we have had a series of warm periods since April. We actually saw a short lived localized bloom in April, but the rains and cloud cover that increased in May and June diminished the bloom considerably. The current sunshine that we have been getting though, amplified with the calmer days of little or light winds has brought the bloom forward.

An earlier bloom season is being seen at the statewide level too. In 2012 the first reported bloom in the state wasn't until July 12, 2012, while this year blooms have been reported as earlier as June 18, 2013. Year to year variations in weather are anticipated which greatly influence the timing of blooms. Climatic variations

are also altering the occurrence of HABS. Globally the trend is moving to more and more blooms. Contributing factors include increasing global temperatures, changes in precipitation, and increased carbon dioxide in the atmosphere.

- **Oregon HABS 2012:**
<http://public.health.oregon.gov/HealthyEnvironments/Recreation/HarmfulAlgaeBlooms/Archive/Pages/2012.aspx>
- **Oregon HABS 2013:**
<http://public.health.oregon.gov/HealthyEnvironments/Recreation/HarmfulAlgaeBlooms/Pages/Blue-GreenAlgaeAdvisories.aspx>

On the larger timescale, paleolimnologic records from sediment cores show that the HABS have been worsening in Devils Lake at least since the 1960's (Eilers, *et al.* 2005). Nutrients are a major contributing factor and the degradation of the lake can be directly attributed to the changes in land use such as clear cutting, development, agriculture, and urbanization beginning around the 20th century. While weather would play a role in annual variations the overall trend has been for increasing HABS. Similarly while we had some recent years with increased intensity (2008 -2009), followed by a period of less intensity (2010-2011) followed by period of greater intensity (2012), {See Presentation from December 2012: http://www.dlwid.org/Meetings/FY_2012-2013/Presentation_2012-12-13_Lake_Level_Assessment.pdf,} the larger overall trend has been for increasingly more blooms.

From Eilers report in 2005 (<http://www.dlwid.org/Research/2005-Eilers-et-al.pdf>), it is clear that the carbon (Figure 9) and nitrogen (Figure 10) content of the sediment has increased precipitously in the last century. Phosphorus trends are less conclusive (Figure 11). The first figure shown below Figure 7 shows the radio isotope dating technique used in the sediment core, and for reference note that in all the figures that the 20cm and the 40 cm marks date to approximately 1980 and 1880, respectively as we move deeper into the sediment and further back in time. Figures 12 and 13 represent the amount of two types of blue-green algae found in the same sediment core. Both *Anabaena* and *Gloetrichia* have been also on the rise over the last century, and both increasing one logarithmically the other exponentially. This period of time corresponds to the increase in nitrogen and carbon found in the sediment.

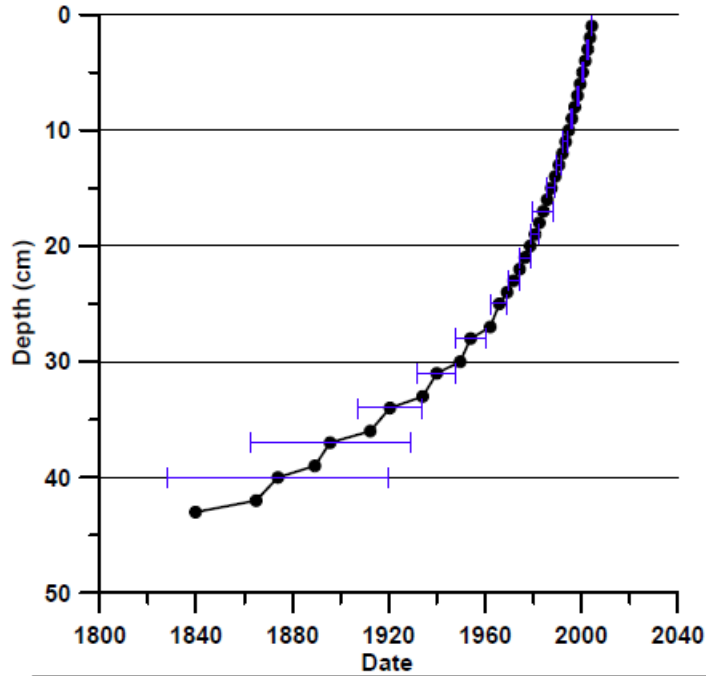


Figure 7. Age of sediments inferred from ^{210}Pb dating. The blue horizontal lines represent the uncertainty in the dates.

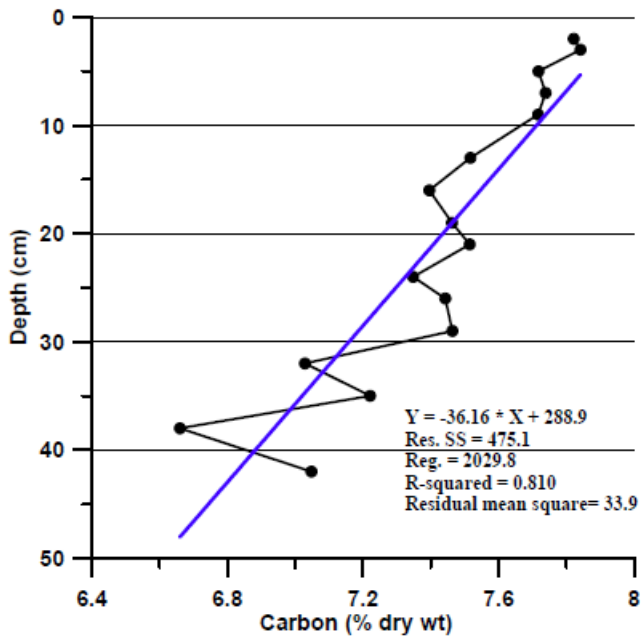


Figure 9. Carbon content in the sediments of Devils Lake. The blue line is the best-fit linear regression.

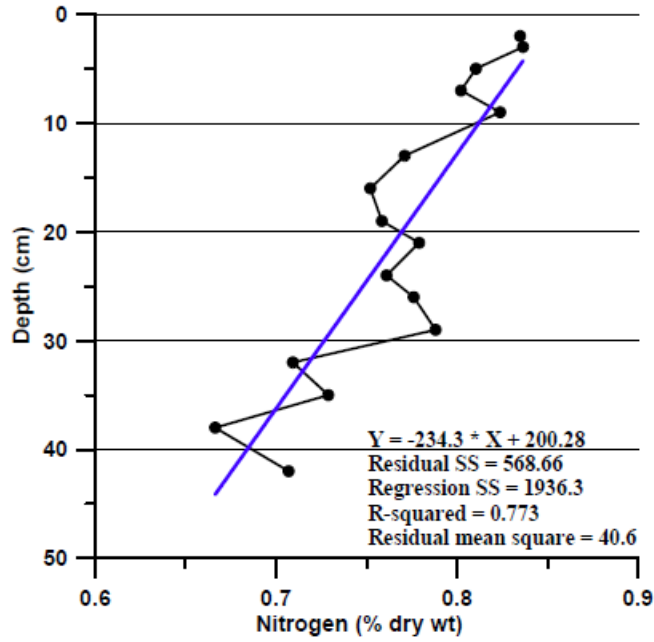


Figure 10. Nitrogen content in the sediments of Devils Lake. The blue line is the best-fit linear regression.

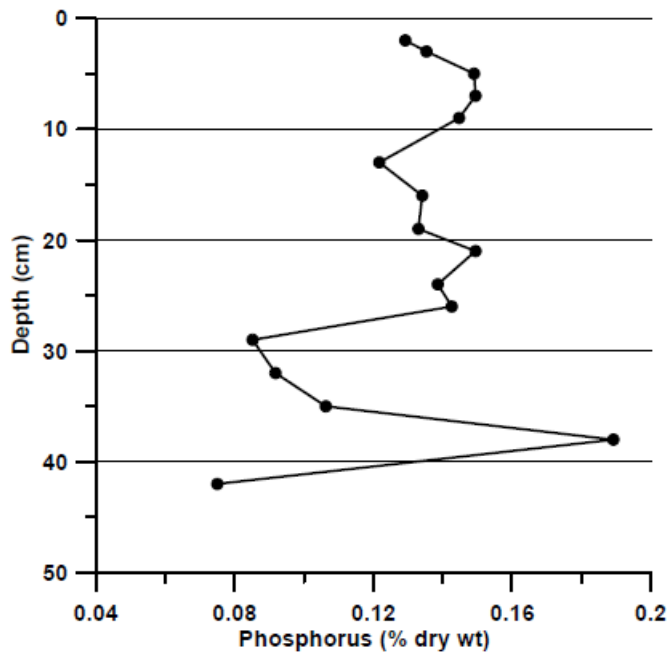


Figure 11. Phosphorus content in the sediments of Devils Lake.

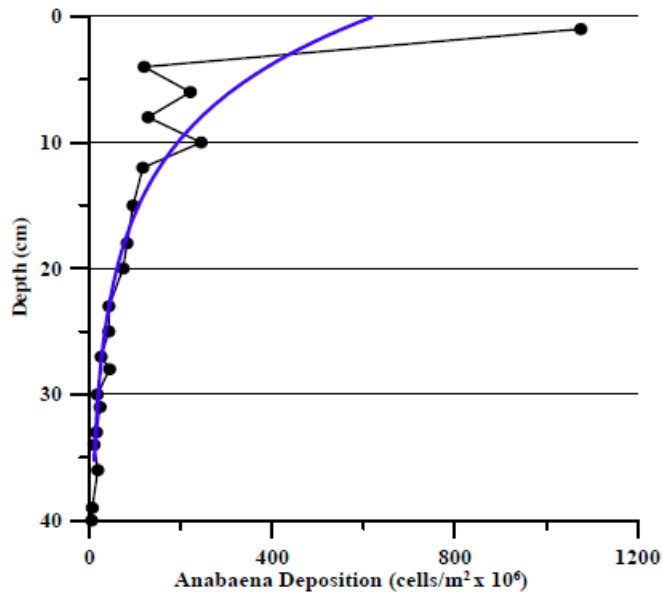


Figure 12. Deposition rate of *Anabaena* akinetes in the sediment of Devils Lake. The blue curve is a logarithmic fit to the observed data.

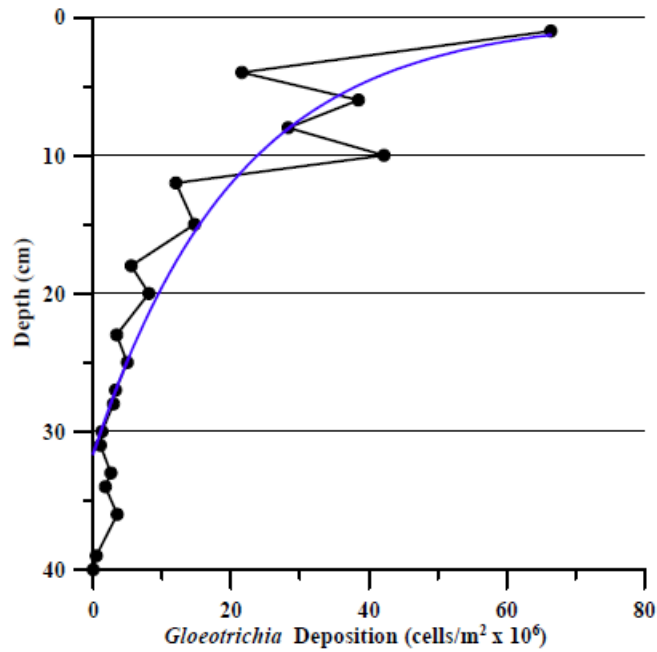


Figure 13. Deposition rate of *Gloeotrichia* akinetes in the sediment of Devils Lake. The blue curve is an exponential fit to the observed data.

The question of how lake level may impact the blue-green algae is often inquired. Since the District began impounding the lake in the late 1990's to at least 2005 when Eilers *et. al* did their study, the blue-green algae have continued to increase. Elevating the lake level in the summer months however is likely not the primary driver in the increased HABS as it is only coincident to what is likely the larger issue of nutrients in the lake. Over a longer period of time (at least the 1960's and well before impoundment) HABS have been increasing. Impounding additional water did not reverse the exponential growth of the blue-green algae in the study, if anything it continued it or had little or no effect. To the reverse, should the lake not be impounded or impounded to a lower level as was implemented last summer, it is unlikely that such trends would change. HABS would continue to increase until the nutrients came under control. Small variations and changes in lake height, man-made or otherwise, (as would have occurred naturally in Devils Lake over the last centuries due to changes in the weather from year to year) have likely much less to do with the current HABS issues faced by the lake than does the role of cultural eutrophication from the development of the shoreline, loss of forest cover, loss of wetlands, agriculture, and urbanization.

Other ongoing monitoring includes data collection for dissolved oxygen, pH, conductivity, temperature and turbidity. Interested parties can visit our water quality monitoring page for more information or contact Lake.manager@dlwid.org.