

# AGENDA

2014 December 11

Regular Meeting: 6 pm

Lincoln City, Council Chambers

801 SW Hwy 101, 3<sup>rd</sup> Floor



## Quick Look:

- Grass Carp
- Water Quality
- Financial Review

## Devils Lake Water Improvement District

Post Office Box 974, Lincoln City, Oregon 97367

Phone: (541) 994-5330 Fax: (541) 994-6040

[www.DLWID.org](http://www.DLWID.org)

### I. Roll Call

### II. Consent Agenda

- Minutes of the Previous Meetings
- Financial Report

**III. Comments from Citizens Present on Agenda/Non-Agenda Items:** *This is an opportunity for members of the audience to bring to the District's attention any item not listed on the agenda for public hearing. Comments are limited to five (5) minutes per citizen, and the Board of Directors may use the light system. Speakers may not yield their times to others, and as a general rule this is not a time for exchange of questions. At the conclusion of this agenda item, a board member may discuss or raise questions regarding an item presented by a citizen. The Chair has the authority to reduce the time allowed for comment in accordance with the number of persons present and signed up to speak.*

### IV. Unfinished Business

(Agenda Support Item A)

- The Devils Lake Plan
  - Septic / Sewer
  - Save our Shoreline
  - Vegetation Management
- Communications Report
- Safety Report
- MidCoast TMDL
- East Devils Lake Road
- Policy Updates
- Harmful Algal Blooms
- Water Quality Monitoring
- Intern Report
- Replacement of the Water Impoundment Device (The dam) (Randy Weldon)

### V. New Business

(Agenda Support Item B)

- Financial Review

### VI. Non-agenda Items

**VII. Additional Comments from Citizens Present on Non-Agenda Items:** *This is an opportunity for members of the audience to bring to the District's attention any item not listed on the agenda for board discussion. Comments are limited to five (5) minutes per citizen, and the Board of Directors may use the light system. Speakers may not yield their times to others, and as a general rule this is not a time for exchange of questions. At the conclusion of this agenda item, a board member may discuss or raise questions regarding an item presented by a citizen. The Chair has the authority to reduce the time allowed for comment in accordance with the number of persons present and signed up to speak.*

### VIII. Board Comments & Announcement

### IX. Adjournment

Meetings of DLWID are handicapped accessible under the ADA.

If special accommodations are needed, please contact the District Office at (541) 994-5330 48 hours prior to the meeting.

**Staff Reports 2014-12-11  
Robertson & Laszlo**

**Consent Agenda:**

- Minutes of the Previous Meeting
- Financial Report

**Unfinished Business**

**Agenda Support Item A**

- a. **The Devils Lake Plan:** A watershed based plan adopted by the Board in 2011 that seeks to address the root causes of nuisance aquatic vegetation and/or Harmful Algal blooms which are excessive nutrients.

*Executive Summary excerpt\*:* “Devils Lake is a shallow, 680 acre coastal lake that has long suffered from the effects of inputs of excess nutrients. Most prominent of these effects was the domination of the lake by nuisance aquatic plants in the 1980’s. Aquatic weed infestations largely choked the lake covering over 60% of the surface. Recreation was greatly impacted, and property values were in decline. In 1984, a local government entity, Devils Lake Water Improvement District (DLWID), was formed with the purpose of improving water quality, improving the environment for fish and wildlife, and generally reestablishing beneficial uses, including safe navigation and public access.

“Current concerns in the watershed are ongoing inputs of nitrogen and phosphorus, increasing sedimentation, erosion, stormwater, annual cyanobacteria blooms, and the threat of the return of nuisance aquatic plants to the lake.”

\*View the full document online: [http://www.dlwid.org/Projects/Devils\\_Lake\\_Plan/Devils\\_Lake\\_Plan\\_v2.1.pdf](http://www.dlwid.org/Projects/Devils_Lake_Plan/Devils_Lake_Plan_v2.1.pdf)

Projects within the scope of the plan are being worked on simultaneously and are listed on the Agenda and in this staff report as subheadings. Updates to the work on the projects are presented month to month as change happens and are left on the agenda until the project is complete. For a full background and all updates, please refer to previous staff reports and the Projects Page of the District’s Website under these headings: <http://www.dlwid.org/Projects.html>

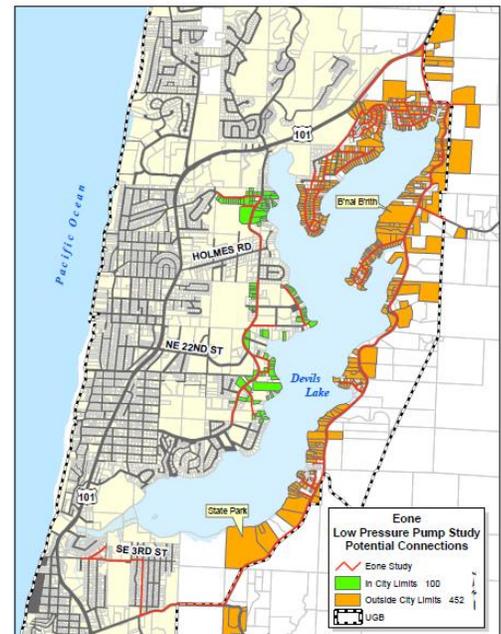
**i. Septic / Sewer**

- <http://www.dlwid.org/Projects.html#Septics>
- <http://www.dlwid.org/Projects.html#Sewer>

**No update since last meeting.**

**To Do and Pending Items:**

- Mandatory Septic System Inspection Ordinance: Lincoln City, goal is by 2014-12-31 per City Manager
- Full buildable lands inventory: Lincoln County - Sent follow up inquiry on 2014-08-06. Spoke with GIS coordinator 2014-09-19 at GIS Symposium by the Sea. Still on the list, just not as high of ranked priority.



- Urban Growth Management Agreement: Lincoln City and Lincoln County, with FY 2014-2015
- Sewer Master Plan Update: Lincoln City – expected by April 2015
- Environmental Review of low pressure sewer backbone: City & DLWID expected by April 2015

Voyage LID: (Chair Green)

**Robertson:** The District provided public comment at the City Council’s 2014-11-24 meeting in support of moving forward on the Voyage LID without the expanded footprint. The council voted unanimously to proceed in that fashion including the Reimbursement District Overlay.

Link:

<http://lincolncityor.iqm2.com/Citizens/SplitView.aspx?Mode=Video&MeetingID=1450&Format=Agenda>

Public Comment: 0:15:00 (3 minutes)

Council Discussion: 0:21:05 (7 minutes)

Council’s decision to move forward on the original footprint lays out these next steps

1. Direct staff to Revise Engineering Report and Include Reimbursement District Overlay
2. Hold new Formation Hearing
3. Decide if the City then chooses to proceed

Direct Link to Engineer Report:

[http://www.dlwid.org/Projects/Sewer/Voyage\\_LID.pdf](http://www.dlwid.org/Projects/Sewer/Voyage_LID.pdf)

## ii. Save our Shoreline (SOS)

- <http://www.dlwid.org/Projects.html#SOS>

Additional outreach to be conducted in December. Including following up with DLNA who’s representative Mitchell Moore had requested in October that Ava and he seek a time in December.

## iii. Vegetation Management

- <http://www.dlwid.org/Projects.html#Vegetation>

The District received word that ODFW completed a study of the existing Grass Carp in Devils Lake in which the age and sterility of fish were examined. This work was led by Dr. Ben Clemens of ODFW and relied on a number of individuals inside and outside of ODFW. The District participated in the sampling of the fish on multiple days over the summer. The objective was to determine if illegal stocking had occurred or fish were reproducing.

If either was the case the District’s application would be likely rejected. Fortunately for the District this was not the case and thus our application will have much better

likelihood of success – notable no guarantee of success – than if they had discovered evidence of illegal stocking or fertility.

The summary of the report followed by the conclusion is shown here:

- To determine whether illegal stocking or reproduction by presumed sterile grass carp, *Ctenopharyngodon idella*, has occurred in Devils Lake, 10 fish were lethally sampled on July 22, 2014. No juvenile-sized fish were observed or sampled. Several indices were measured on each of the 10 fish.
- No PIT tags or Asian tapeworms were detected among these fish.
- Ploidy testing of the blood of the 10 fish indicated all were triploid. One of these fish had some smaller cell sizes, and it may have had mosaic of ploidy (mixture of ploidy types).
- Nine of the 10 fish were males; one was a female. Males exhibited all stages of sexual development. Females had vitellogenic eggs. Various levels of intersex and gonadal deterioration existed among several, but not all, of the fish.
- Age estimates categorically agree with the fish originating from one of the three legal stockings during 1986, 1987, and 1993.
- It is believed that these grass carp are some of the oldest grass carp in North America.
- The 10 grass carp were 660 – 864 mm (FL), a size range that overlaps with much younger year classes elsewhere in the United States.

## CONCLUSION

We sampled grass carp in Devils Lake to ascertain whether multiple age classes exist in this lake, and to use this information to infer whether reproduction is occurring among the presumed sterile population(s) of fish or if illegal stocking has taken place. Initially, the combination of triploidy with some other ploidy, advanced testicular stages, and relatively young age estimates by Dr. Kirk for fish number 1 suggested that this fish may have resulted from illegal stocking. However, after weighing the evidence, I do not believe that this is the case for three reasons: 1) we have no additional evidence to suggest that the fish had different ploidy in its gonadal tissue; 2) sterile male grass carp can have advanced testicular development, and this is a fairly normal process; and 3) my reassessment of the otolith of this fish indicated it is much older than eight years of age. In conclusion, the information that I have presented above, stemming from multiple tissues and laboratories, suggests that the 10 fish we sampled originated from one of the three legal stockings during 1986, 1987, and 1993 (Table 1), making these fish about 21 – 28 years old.

## b. Communications Report

- 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.igm2.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.

- Social Media: The District uses these social media components to reach the general public periodically.

- YouTube: <http://www.youtube.com/user/DLWID>
- Facebook: <https://www.facebook.com/DevilsLake.Oregon>
- Twitter: [https://twitter.com/Devils\\_Lake](https://twitter.com/Devils_Lake)

- KBCH am 1400: The District has had a standing interview spot on the THIRD Tuesday of the Month from 7:30 – 8:00 am.

- 100 History of Devils Lake: Available Online

Download:

[http://www.dlwid.org/Communications/Know\\_Your\\_Lake/100\\_Year\\_History.pdf](http://www.dlwid.org/Communications/Know_Your_Lake/100_Year_History.pdf)

- Know Your Lake: The District, led by Chair Brian Green, has been publishing informational articles in the News Guard. The articles are meant to inform the public on the activities of the District. You can download copies of the articles from our website's Project Page: <http://www.dlwid.org/Projects.html>

- Devils Lake Radio 1610 am: Audio updates forth coming.

- Clearwater E-Newsletter: Fall issue released in conjunction with autumnal equinox. Click here to see a copy: <http://myemail.constantcontact.com/Clear-Water-Newsletter-Fall-2014.html?soid=1102761961457&aid=ufs-4JHSYvs>

c. **Safety Report** (Robertson) Ava has been drafting a safety manual which is readying for my review. Safety is no accident!

d. **MidCoast TMDL** (Robertson)

- <http://www.dlwid.org/Projects.html#TMDL>

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.

- 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: No meetings since our last DLWID meeting. View the website for more information.

Bacteria Technical Working Group: Most recent meeting was held in Newport in October which we reported on last time. Next meeting to be held in January 14, 2015.

- e. **East Devils Lake Road**: Repeat of last month - Fish are running in the D River, but no word as to any fish being high centered on the road. Elevation changes to the road last year prevented the initiation of any salmon rescue efforts, which hopefully will continue through this year.
- f. **Policy Updates**: To be continued until next month.

The District has proposed updates and additions to its Policy Manual for the following items: **(BOLDED require further actions)**

- Policy and Procedures Manual (Adopted 2014-02-13)
- **Personnel Policy/Manual (Draft sent 2013-12-31: reviewed, edited, and tabled)**
- Mandatory Reporter Policy (Adopted: May 2013)
- Safety Policy (included in larger update)
- Financial Manual (Adopted 2014-01-09)
- Records Policy (Adopted 2014-01-09)
- Board Duties and Responsibilities (See Policy and Procedures Manual)
- **MSDS (Intern beginning to address the collection of new SDS)**
- Employee Training (Policy added to Personnel Policy - **Safety Manual forthcoming separately**)
- Light Duty Return to Work (included in Personnel Policy)
- Investment Policy (Adopted 2014-10-09)

**Links to these drafts are available on the website:**

[http://dlwid.org/Board%20Directors.html#Board\\_Official\\_Actions](http://dlwid.org/Board%20Directors.html#Board_Official_Actions)

### g. **Harmful Algal Blooms:**

Aeration/Oxidation Project: Following subsequent review by the District's attorney the Request for Proposals for an Engineering Report and General Report was issued on Wednesday, November 29, 2014. Emails were sent to approximately 60 entities with excerpts of the Scope of Work and links to the full RFP which was posted online also on the 29<sup>th</sup>. Additional publication requirements are in process with statewide and local media.

Website with RFP: <http://www.dlwid.org/Projects.html#Aeration>

Outline of Process:

1. Request for Proposal (RFP) is released and advertised
2. Responses received and opened publically

3. Review and prioritization of most qualified respondents
4. District works with most qualified respondent to determine more precisely the scope of the project and the cost of the project.
5. If the District finds that the cost is prohibitive, it may seek the same process with the second most qualified respondent, and so forth.
6. Given an Engineering Contract, an Engineering Plan and General Report is produced.
7. A public hearing is held on the Engineering Plan and General report.
8. The Board approves the Engineering Plan and General Report with any necessary modifications
9. Board determines how the project is to be funded
10. A four week period is provided
11. Request for Proposals on the Engineering Plan is released and advertised
12. Permitting and Easement acquisition
13. Responses are received and opened publically
14. Contract is awarded to lowest qualified respondent
15. Project is initiated and executed until completion.

Email version of announcement:

The Devils Lake Water Improvement District is seeking proposals for Engineering Plans and a General Report for a lake-wide, sub-surface aeration/oxidation system for Devils Lake. A Request for Proposals for this project is available online at [www.DLWID.org](http://www.DLWID.org). Below are a few excerpts from the solicitation document.

- [Request for Proposals](#)
- Submission deadline: **2pm, Friday, January 16, 2014.**
- For questions, clarifications, and submission requirements, plus terms and conditions please refer to RFP.

Please feel free to share this request with any and all interested parties. Thank you.

Sincerely,

Paul Robertson, M.Sc., Lake Manager  
 Devils Lake Water Improvement District  
 PO Box 974, Lincoln City, OR 97367

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**Request for Proposals: Devils Lake Aeration/Oxidation Project (Excerpts Only) --- [Download full RFP Here!](#)**

<p><b><u>Devils Lake</u></b></p> <p>Z ave: 8.4' = 2.6m        Z max: 21.1' = 6.4m        Surface Area: 685 acres = 277 ha        Volume: 5,750 AF = 7.1 x 10<sup>6</sup> m<sup>3</sup>        Watershed: 11.1 mi<sup>2</sup> = 28.3 km<sup>2</sup></p> <p style="text-align: center;"><b><u>D River</u></b></p> <p>Length: 120' +/- 5' = 36.6 +/- 1.5 m</p> <p style="text-align: center;"><b><u>303a Listed Waters in the Basin</u></b></p> <p>Devils Lake: Chl <i>a</i>, pH        Thompson Creek: fecal coliforms</p>
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The Devils Lake Water Improvement District is a small local government in Lincoln County, Oregon, and is seeking proposals for Engineering Plans and a General Report for a lake-wide, sub-surface aeration/oxidation system for Devils Lake. The project shall necessarily be cost effective for the District and be designed to address reoccurring Harmful Algal Blooms (HABs). Further the project shall be developed to achieve the outcome of obtaining the State of Oregon's Water Quality Standards for Chlorophyll *a* of 15 ug/L and pH within a range of 6.5-8.5 which ultimately will provide for the delisting of Devils Lake from the EPA 303<sub>d</sub> list for both parameters.

Engineered outcomes should also serve to reduce the volume of unconsolidated sediments throughout the lake bed to further provide oxidation of such sediments to reduce nutrient cycling

leading to Harmful Algal Blooms which cause exceedances of Oregon Health Authority’s HABs guidelines for toxins and/or cell count exceedances.

**Outcomes:**

1. The Engineering Plan and General Report shall provide for a cost effective sub-surface and land based aeration/oxidation system that upon construction will provide year-round reduction in the Chlorophyll *a* levels to meet the federal delisting criteria of 15 ug/l.
2. The design shall further provide a system that through the reduction in HABS maintains year-round pH values between 6.5-8.5.
3. Engineering Plan when implemented shall reduce Harmful Algal Blooms and associated algal toxins to below the Health Advisory thresholds listed by the State of Oregon’s guidelines shown in Tables 1 & 2 of this request.
4. The General Report to accompany the Engineering Plan shall identify all necessary Improvements including but not limited to, permits and easements and the associated costs of, and timeline for acquiring such.
5. The General Report shall provide for the projected costs for both initial development of the project and the ongoing operation and maintenance of the system.
6. Engineering Plan and General Report shall provide for an equitable methodology for assessing benefited and adversely affected properties within the District, and incorporate such financial formula into a financing portion of the report.
7. Upon completion and subsequent to approval of the Engineering Plan and General Report with or without modifications by the District’s Board of Directors, the Consultant shall develop a Bid Packet for inclusion in a subsequent Request for Proposals for Construction of the Works and Improvements.
8. Consultants shall provide for expert guidance in evaluating any and all Proposals received from the subsequent Request for Proposals for Construction of the Works and Improvements.

**Scope of Work:**

The proposed project seeks the development of an Engineering Plan and General Report which may ultimately lead to the Construction of Improvements and Works for the lake-wide aeration/oxidation of Devils Lake through a separate competitive bid process. The project design shall rely on shoreline and sub-surface physical components to provide aeration and/or oxidation to the system, and not be chemically or biologically based other than what is provided in a natural system. This request and the Scope of Work requires that the Project and the Consultant to meet the highest standards prevalent in the industry associated with providing such a project with particular emphasis on the characteristics of Devils Lake being a shallow, high recreational use, temperate, coastal lake in Oregon that is home to a Threatened Oregon Coastal Coho Salmon (*Oncorhynchus kisutch*).

The project design when implemented shall provide for the outcome of long-lasting, year-round suppression of Harmful Algal Blooms throughout Devils Lake and its major canals, and shall provide the oxidation of the substrate sufficient enough to significantly reduce the unconsolidated sediment of Devils Lake further preventing Harmful Algal Blooms and related water contact advisories. Project design through sub-surface and land-based aeration/oxidation shall cost effectively eliminate nuisance levels of Harmful Algal Blooms, reducing the levels of the impairment criteria of pH and Chlorophyll *a* associated with excessive blooms within the range of or below the threshold of state and federal standards. Specifically the water quality standard for Chlorophyll *a* is 15 ug/L while the pH must be within the range of 6.5-8.5 to be eligible for delisting. Achievement of these standards is a necessary outcome of the project design. Further the project by design when implemented should prevent the recreational water quality guidelines provided by the State of Oregon for algal toxins and/or cell counts to be exceeded (See Table 1 & 2).

**Table 1 Oregon Health Authority guideline values for cyanotoxins in Oregon's recreational waters**

	Anatoxin-A (µg/L)	Cylindrospermopsin (µg/L)	Saxitoxin (µg/L)	Microcystin (µg/L)
<b>Guideline Value</b>	<b>20</b>	<b>6</b>	<b>100</b>	<b>10</b>

Source:

[https://public.health.oregon.gov/HealthyEnvironments/Recreation/HarmfulAlgaeBlooms/Documents/HAB\\_Public\\_Health\\_Advisory\\_Guidelines\\_101012.pdf](https://public.health.oregon.gov/HealthyEnvironments/Recreation/HarmfulAlgaeBlooms/Documents/HAB_Public_Health_Advisory_Guidelines_101012.pdf)

**Table 2. Oregon Health Authority guidelines for listing of public health advisories for Harmful Algal Blooms.**

	All Toxigenic species: Combined cell count	Microcystis or Planktothrix Individual cell counts
Guideline Value	≥ 100,000 cells/mL	≥ 40,000 cells/mL

Source:

[https://public.health.oregon.gov/HealthyEnvironments/Recreation/HarmfulAlgaeBlooms/Documents/HAB\\_Public\\_Health\\_Advisory\\_Guidelines\\_101012.pdf](https://public.health.oregon.gov/HealthyEnvironments/Recreation/HarmfulAlgaeBlooms/Documents/HAB_Public_Health_Advisory_Guidelines_101012.pdf)

The project area includes primarily the meandered boundary of Devils Lake, but may extend into privately owned canals as may be deemed necessary by the engineering design to achieve the necessary reductions, and such that access is granted by the property owners. As this project is in a lake owned by the State of Oregon which is home to a genetically distinct population of threatened Oregon Coastal Coho Salmon (*Oncorhynchus kisutch*), the project is contingent that all appropriate permits and easements be obtained, and that project design, installation, operation, and maintenance adhere to all local, state, and federal regulations.

This project is contingent on its affordability to the District. As such funding for the capital improvements and ongoing operation and maintenance must ultimately be met within the District’s capacity to serve the project long-term. For guidance copies of the District current budget can be found on the District’s website. As the project may require the District to seek additional funds, the consultant shall break up the project cost into an equitable formula showing how assessments will be made against benefited and affected properties. This may include a separation for District properties inside the watershed and those outside the watershed as are the District’s taxing districts.

Improvements and Operation and Maintenance costs should be provided in the Engineering Plan and General Report. This should include, but not be limited to the estimated cost of acquiring permits, easements, for providing power infrastructure to each site where electricity is needed, annual anticipated electrical costs, anticipated maintenance costs, and costs associated with housing and siting all structures. Such housings shall protect the equipment from the marine environment, provide buffering to creation of a public nuisance (e.g. sound, aesthetics), and allow adequate access for servicing of the equipment. Cost of such installations should be subtotaled by onsite installation and category (e.g., equipment, power, permits, easements, and maintenance).

Engineering Plans and the General Report shall also include the estimated costs associated with the full purchase of equipment, delivery, installation, and construction of the aeration/oxidation project. Equipment shall be suited for long-term use in the coastal marine environment and be fitted for use in recreational lakes where boating, fishing, anchoring, and other activities are the norm.

The project footprint again includes all of Devils Lake’s meandered boundary, plus any canals connected to the lake that may need to be included as determined by the Engineering Plan and General Report. While the project when installed shall be designed to be turn-key, ultimately adequate training of District personnel for the safe and efficient long-term operation and maintenance of the project will also be necessary and shall be estimated as part of the General Report. All costs and fees shall be clearly delineated and summarized in spreadsheet form.

**NOTICE:** For submissions and complete details, please follow and refer to the full [REQUEST FOR PROPOSALS](http://www.DLWID.org) available at [www.DLWID.org](http://www.DLWID.org)



## Devils Lake Water Improvement District

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## **h. Water Quality Update:**

HABS: The District and the Oregon Health Authority collected lifted the water contact and health advisories on the lake for Harmful Algal Blooms on November 24 and 25, 2014, respectively. This was the same day a neighboring coastal lake – Tenmile Lake – was also delisted for HABS. Interestingly Lost Lake which was the first lake listed this year in Oregon (6/1-6/22) was relisted on 12/4 with a winter bloom continuingly demonstrating the fortitude of these microorganisms.

Media releases were sent out to local and statewide outlets (Including the Oregonian, Statesmen Journal, KGW) and received coverage through many forms. Posting signs were removed, audio on Devils Lake Radio (1610 am) was changed, voice message was changed, website updated, and WQ listserv was sent out.

Source: <https://public.health.oregon.gov/HealthyEnvironments/Recreation/HarmfulAlgaeBlooms/Pages/Blue-GreenAlgaeAdvisories.aspx>

## **i. Intern: Ava Laszlo**

I helped to prepare a list of stakeholders of which to send our RFP for the potential aeration/oxidation project. I've nearly completed building the e-newsletters through mid 2015, and have also spent time writing a radio script to update the radio recording station at Regatta Grounds park. Topics that I have written ads for include save our shoreline, events on Devils Lake, species in and around the lake, what to fish and the spots available around the lake to do so, and invasive species and how to prevent them from entering/exiting Devils Lake.

The past several days I have spent taking inventory of our lab space. I've identified chemicals and supplies that we have in stock and those that we are lacking, in order to determine the supplies that need to be ordered.

Paul and I took a trip up Thompson Creek to search for coho that have migrated back to their natal habitat after traveling from the Pacific, through the D River, and into Thompson Creek. We were pleasantly surprised to find 13 salmon in a relatively short time period. Lastly I attended a SDCWC Tech Team meeting with USFS, ODFW and Lincoln SWCD.

## **j. Replacement of the Water Impoundment Device (The dam) (Director Randy Weldon)**

At our November 2014 meeting, my proposal to the board was to explore the idea of removing the concrete foundation of the current dam and using a different type of impoundment device in the summer. I suggested that we use sandbags or water-filled flood control tubes during the short recreational impoundment period instead of our current structure. I emphasized that this project does not alter the district's current policy on summer lake levels. It only changes the way we impound lake water during the summer.

Last month, in greater detail, I explored the benefits we would expect to see by returning D River to a natural river system for 8-9 months of the year during the non-recreational period. Removing the impediment of the concrete foundation would allow for a faster flowing, deeper channel with the following benefits.

- Increased velocity in the river allows more sand to be transported back to the beach in the winter.
- The lake level would recede faster, reducing flooding issues and shoreline erosion.
- Lower winter lake levels would reduce saturation of low lying septic tanks and drain fields.
- Improved habitat for wild Coho salmon and other species traveling in and out of the lake.
- Increased lake turnover which is a benefit in fighting Harmful Algae Blooms.
- Reduction of the sandbar east of the bridge will limit the seagull gathering during the summer which will reduce the *e coli* warnings and improve water quality.
- Reduction of the sandbar could reopen the river to paddle boards and kayaks.

Discussion last month revolved around the possibility to accomplish this project within our water right. This question has been answered by the Oregon Water Resources Department's Region Manager. Please see email below from the Oregon Water Resources Department. There was also discussion as to whether the river would move more sand out to the beach compared to now. Please see email below from a hydrologist.

We know from history that we will still have times when the sand will plug the river west of the bridge toward the beach. This happens when there is a combination of heavy swells, high tides and little rainfall. Emergency dredging will continue on occasion.

The US Army Corps of Engineers and Division of State Lands Joint Permit can take up to 120 days to complete. While waiting for our permit to be approved, we could proceed with RFP's for removal of the concrete foundation and select a contractor to do the removal work.

Randy Weldon  
 Director, DLWID  
 December 2014



**----- Original Message -----**

**From: MCCORD Mike L**  
**To: 'randy@dlwid.org'**  
**Sent: Tue Nov 25 9:27**  
**Subject: Fwd: RE: DLWID water impoundment structure**

Good morning Randy. As we discussed, I do not see any issue with using a different method for creating the dam since this dam is non statutory. Being non statutory, the District is not required to submit engineered plans and specifications when it makes alterations to the dam. Although it is not required, it is not a bad idea to consult with an engineer when making changes to a dam.

Permit R-11968 does have some specific language regarding board heights. These elevations were put into the permit to address fish passage. Please make sure that whatever type of structure you put in place is able to be consistent with these elevations. If you have not done so already, I recommend that you coordinate with ODFW to ensure that you are satisfying the fish passage requirements of the permit. It is better to work this out ahead of time rather than trying to address it later. As we previously discussed, continue to maintain the measurement devices that are in place.

Please let me know if you have any further questions or need more information.

Thanks

Mike McCord  
NW Region Manager  
503 986-0893

**From:** Randy Weldon [<mailto:randy@dlwid.org>]  
**Sent:** Wednesday, November 05, 2014 6:27 PM  
**To:** MCCORD Mike L  
**Cc:** [lake.manager@dlwid.org](mailto:lake.manager@dlwid.org)  
**Subject:** DLWID water impoundment structure

Mike McCord

Northwest Region Manager

Oregon Water Resources Department, Water Masters

Mr. McCord

I would like to thank you for spending time on the phone with me a few weeks ago. We discussed in length the Oregon Water Resources Departments view on the Devils Lake Water Improvements Districts idea of utilizing a different type of an impoundment structure instead of our current concrete and wooden boards. Our water rights are R-11968 & 52672.

After our phone conversation it is my understanding that the OWRD is not concerned about what type of impoundment structure we use only that we adhere to the volume, elevation and other conditions spelled out in our permits.

Conditions such as the following, maximum volume is 1360 acre feet, maximum area submerged is 680 acres, maximum depth is 21 feet, maximum lake elevation during summertime impoundment is 9.53 feet above sea level. This 9.53 foot elevation was determined by an OWRD review and full survey after a complaint filed by the Oregon State Parks in 2009. Also continue the daily height data collection and to follow fish passage requirements and also the required draw down in lake levels for evaporation in August and September every year.

The top of the concrete base of the dam sits at 8.03 feet above sea level. This creates a catch basin behind the dam when the strong winter storm swells push up the river into the lake multiple times each winter. This reversal of the D-river brings sand with it and deposits it on the east side of the concrete base. The sandbar now extends over 100 yards up the river east of the dam. This increases in volume every year. Much of this sandbar is well over 9 feet in elevation now. The DLWID used to budget for and spent tens of thousands of dollars over the years to dredge out the river channel on the east side of the dam. This was discontinued over the last couple of decades.

Our idea is to remove the concrete foundation and return the D-River to a natural state except for the 3-4 months in the summer when the district would utilize a different type of impoundment structure. This could be accomplished by using something as simple as a few rows of sandbags and or possibly some new style flood control tubes or bladders or some other temporary similar device.

Below are the benefits we expect to see by removing the permanent concrete base.

- 1) We have as a district tackled the summertime erosion issue by not impounding our full amount of water the last 3 summers. By raising the lake to 9.0 instead of 9.53 we have reduced summertime shoreline erosion from heavy boat wave action. We have been so far unable to mitigate wintertime erosion. If we remove the concrete base in the river it will allow the sandbar to start flushing out of the river back to the beach during heavy rain events. This will lower the height of the sandbar. A lower sandbar will allow more water to exit the lake faster reducing the average wintertime lake level. A lower lake level during the winter will reduce erosion as the upper shoreline will have less saturation and wave impact.
- 2) Reducing the sandbar size and elevation will reduce the summertime gathering of seagulls. The districts DNA tests have shown that *e coli* problems in the river come from avian species. Reducing the bird congregation on the sandbar in the summer will reduce the repeated *e coli* warnings that we have to post about the river. DLWID is very concerned for the health of kids and others who play in the river and out on the beach at the rivers exit.
- 3) Increasing the volume of flow of water out of the lake in the winter will keep the lake lower on average which will reduce saturation of low lying septic tanks and drain fields. This will help water quality.
- 4) Increasing the volume of flow of water out of the lake in the winter will increase flushing of the nutrients and algae out of the lake and will be replaced with rainfall and runoff. This is known as lake turn over. Lake turnovers is a big positive factor in reducing Harmful Algae Blooms (HABS)
- 5) Flooding issues are a problem for some lakefront homeowners. A deeper unimpeded river channel in the winter will allow more volume of water to exit the lake faster which will create a lower lake stage on average. This will also allow more capacity of rainfall before flooding becomes a problem.
- 6) Wild Coho salmon and other native species traveling into and out our lake will benefit in the winter time from an unimpeded and deeper river channel in the form less stress on the fish having to cross the shallow sandbar after coming up the beach and river. They will also benefit in safety in not being so exposed to predators.

We have looked long and hard to try to identify any negative aspects. There will be some the small costs in removing the concrete foundation and in purchasing sandbags, flood tubes, or bladders etc. Other than that it seems to be a positive in most aspects.

We do have a small group of lake front home owners who will probably oppose the DLWID on this matter even though I made it very clear at our October meeting this has nothing to do with summer time lake level decisions which is a very passionate topic with them.

Once again I thank you for your time the other day. Taking over Greg Beamans responsibilities on top of your own job must be challenging. Could you please send me a reply to this email with any concerns or corrections I should know about. Once again thank you for your time.

Sincerely

Randy Weldon Director

Devils Lake Water Improvement District



December 3, 2014

Randy Weldon  
Board Member  
Devils Lake Water Improvement District  
Lincoln City, Oregon

Dear Mr. Weldon:

As per your request, I reviewed the recent staff report (Nov 2014) posted on the DLWID website. I examined your proposal to remove the concrete base of the structure at the outlet of Devils Lake. I believe that your proposal has merit and wish to offer my support for your concept. I have noticed in my years of work on Devils Lake that sediment, primarily comprised of sand, continues to accumulate at the terminus of the lake. This process will continue so long as there is a structure at the outlet that slows the flow of water and allows sediment to be deposited.

You are well aware that the capacity of flowing water to carry sediment is a function of its velocity. I don't need to provide you with detailed mathematical support or complex modeling for this process as you can observe it with your own eyes at the outlet. You identify a number of likely benefits from this action and I concur with your assessment.

Good luck with your proposal.

Best Regards,

Joseph Eilers  
Prof. Hydrologist-WQ (registration #1475)

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## New Business

- A. Financial Review: The District received its independent accountant's review of the District's finances through June 30, 2014.

The report is available online through this link: <http://www.dlwid.org/Financials/Audits-Reviews/2014-06-30.pdf>