Georgia Lakes Society
www.georgialakes.org

Watermarks

Georgia Lakes Society Newsletter

December, 2014

Committed to Protecting and Preserving Georgia's Lakes

President's Corner

What is going on with the Georgia Lake Society? If you've not seen the **website** in the last few weeks, go take a look. Some great work has been done by incorporating photos from the recent contest into the site – our thanks to Mickey Desai and Russell Hill for their efforts!

Our **Lake University Stone Mountain** has a new home on the calendar- February 28, 2015. Mark your calendars. It would be great for someone to take this on and spearhead the effort. We need to enlist speakers and begin marketing the event. If we use the template put in place for the postponed workshop, it might streamline the effort, but I/we am open to other perspectives. The "ball" does need to get rolling.

We are still in need of a **President Elect**. There are several ways to handle this: We can accept nominations; someone could volunteer; or someone could be drafted. Please give this some thought; and the longer a person is in the position in advance of their service, the better prepared they will be when their time comes. I have had great support from past presidents and whoever takes on this responsibility will find their help invaluable.

(Presidents Corner continued on page 9)

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Upcoming Events

GLS Board Meeting - - - - - - - - - - - - - - - Dec 12, 2014
Confluence (AAS) - - - - - - - - - - - - - - March 14, 2015
Lake University in Stone Mt - - - - - - - - -Feb 28, 2015
Lake University in Albany - - - - - - - - - - -Spring, 2015
Lake University in Athens for
Professional CE credits - - - - - - Spring, 2015
Southern Division AFS & GA-AFS - Jan 28-Feb1, 2015
Ga Water Resources Conf. - - - - - April 28 & 29, 2015

Membership and Donations

Join the Georgia Lakes Society (GLS) to help protect and preserve our lakes. Membership is open to all individuals, institutions, corporations, and organizations whose interests are consistent with the objectives of the society. Visit http://georgialakes.org>membership for application and donation information. Annual membership fees are:

Individual membership -- $20
Family membership -- $25
Student membership –FREE
Nonprofit/Public Not for Profit -- $50
Corporate membership -- $100
Sustaining -- $250 (this includes one registration for a GLS conference or workshop)

The Basics of Water Quality Testing

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Have you ever noticed how lakes are like people? They come in different shapes and sizes; some are old and some are young; some are in good shape and others are not. Just as we need to keep an eye on our own health, we should also monitor the health of our lakes and ponds.

Whereas people control what enters their bodies, there is typically no control over what enters our lakes and ponds. As impervious surfaces increase due to urbanization of the landscape, the amount of stormwater that can be absorbed back into the soil is reduced. This in turn increases the amount of unfiltered stormwater introduced into creeks and streams. Many lakes in urban areas are often designed to retain this increased stormwater from neighboring developments. However urban stormwater often introduces elevated nutrients and other issues into the lake. Unfortunately, what enters into a lake or pond usually stays.

All too often a lake may look fine on the surface, but then a serious problem arises out of nowhere. Without any base line data on the water quality parameters of the lake, diagnosing the problem becomes much more problematic. A water quality testing program can provide you with the dynamics of the water chemistry. Over time, you can track changes and help to prevent serious problems before they happen. The following are water quality tests that should be performed to ensure the health of your lake or pond.

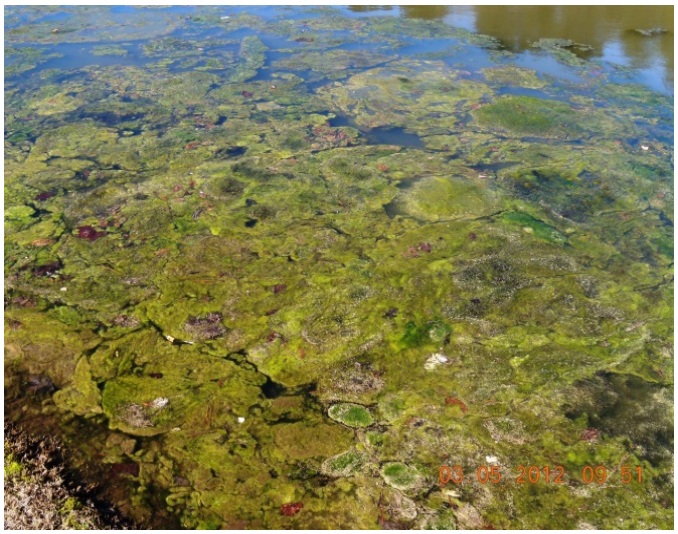
- **Dissolved Oxygen**: Adequate dissolved oxygen is necessary for maintaining good water quality and is essential for aquatic life. Dissolved oxygen levels are reduced by the biological decay of organic material such as decaying plants and animals or animal and human wastes. Low levels of dissolved oxygen can be harmful to fish, and levels that drop too low can cause fish kills. The level of dissolved oxygen can often be controlled by limiting excessive planktonic algae growth. There are aeration systems that can be installed in a lake to increase dissolved oxygen in ponds that experience frequent low dissolved oxygen problems.

- **Water Temperature:** While not much can be done to change the temperature of your pond, it is important to be aware of the temperature. It is helpful to record the summer highs and winter lows with a thermometer. The water temperature can vary based on the depth and size of the pond and the surface water temperature will fluctuate more than the deeper waters because it is more easily affected by the air temperature. It is good to know the temperature prior to stocking fish, as some species thrive in warm waters while others prefer cooler temps. The temperature of the water correlates with the amount of oxygen that can be dissolved, and warm water has less dissolved oxygen than cold water.

- **Clarity:** Everyone loves the look of a clear lake. The clarity of the water can also tell a lot about its health. Water clarity should be checked with a device called a Secchi disk. It is a black and white circular device that is attached to a string and lowered into the water to record water clarity. The depth where the disk is no longer visible is known as the Secchi depth. The clarity of the water can be affected by the levels of plankton growth or suspended sediment in the water column. The Secchi depth measurement of the water column will be reduced when a lake has elevated planktonic algae population, which can suggest dangerously low dissolved oxygen levels may occur in the near future.

- **Total Suspended Solids and Dissolved Solids:** The amount of suspended sediment in the water is another important indicator of the overall health of your pond. Total suspended solids (TSS) are particles that remain in a solid form in the water. Some common TSS are silt, clay and a wide range of chemicals that are carried into lakes and ponds from urban stormwater runoff, agricultural runoff and chemicals found in your own backyards. A high concentration of TSS can have an adverse effect on the water quality by reducing the clarity and raising the water temperature and are harmful to the health of fish and other aquatic life.

Two of the most common dissolved solids found in Georgia lakes and ponds are nitrogen and phosphorus. These elements can be found in lawn fertilizers, water fowl waste, and agricultural waste and urban stormwater runoff. Although you cannot always control what's in the water that enters your ponds, high levels of nitrogen and phosphorus can adversely affect the quality of your water. They can be responsible for high levels of algae and other nuisance aquatic vegetation. Possible remedies include adding a vegetated buffer to the shoreline or adding nutrient reduction treatments.



No one wants to get old and neither does your lake or pond. Taking an interest in the health of your lake can help to slow down the aging process. The natural process of eutrophication will continue to occur, but with proper care you can slow the pace.

An example of mistreatment of a valuable resource

Watermarks Information

The Watermarks goal is to enhance communications among GLS members and with academic, business, community and government interests. Watermarks is an Adobe pdf, posted on the GLS website and distributed via an email hyperlinked to that pdf file. The Watermarks editor solicits comments, ideas and future news pieces at gls@georgialakes.org

Metropolitan North Georgia Water Planning District Reports

Water management planning for the Greater Atlanta Area should be of significance to those interested in Georgia lakes. Several members of GLS, including several Board members, are also members of Basin Advisory Committees (BAC). Danny Johnson, Planning District Manager, has provided a report on the plan for 2016 which is presented below. Following that, summary reports for recent meetings of three of the BACs are presented. Anyone interested in the BAC meetings may attend as a visitor and can apply to be part of next year's councils. Contact GLS or the Metropolitan North Georgia Water Planning District for information. **GLS invites those involved in Regional Water Planning from other areas of the state to send us updates to share with Watermarks readership.**

Preparing for the Metro Water District 2016 Management Plan Update

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The Metropolitan North Georgia Water Planning District (the District) is currently preparing for the 2016 update to its water resource management plans. While still addressing the essential planning elements such as water demand and wastewater generation forecasting, the District will focus on an improved and stronger integration approach to planning. Not only will the document format be changing, but new methods will be used to assess the impact of existing and proposed plan requirements. These

improvements will lead to an even stronger and more valuable plan to the communities within the District.

History

The District was established in 2001 by state law (three years prior to the 10 other regional water planning councils) for the purpose of developing comprehensive regional and watershed-specific plans to be implemented by local governments. The District undertakes its mission by developing watershed specific plans for storm water management, wastewater management, and water supply and water conservation as well as promoting and supporting intergovernmental coordination and plan implementation activities.

The District released its first set of management plans in 2003 followed by its most recent update in 2009. Both sets of plans were developed as three separate documents: the Watershed Management Plan, the Wastewater Management Plan, and the Water Supply and Conservation Management Plan. While the District is required by law to update these plans every five years, Georgia Environmental Protection Division (EPD) granted the District an extension on the current update in order to align the District's schedule with the same five year schedule as the other 10 regional water planning councils. State-wide, all regional water plan updates including the District will be finalized by November 2016.

2016 Plan Update

The District is currently preparing the scope of work for the 2016 update. Given the solid foundation already in place, this update will utilize as much of the 2009 plan as possible and build on or modify sections that need improvement while addressing new requirements and challenges. This round of planning will include:

- updated water use data (from 2015 Metrics Report update)
- updated wastewater generation data(from 2015 Metrics Report update)
- updated water quality data (from 2015 Metrics Report update)
- revisions to the water demand and wastewater generation forecasts through at least 2050 as directed by Georgia EPD
- water conservation program analysis
- updated facility planning for all counties and cities within the district

Additionally, the District will undergo a full review of existing action items required within the plan and consider modifications or additional action items where necessary.

The District's six Basin Advisory Councils (BACs) and the Technical Coordinating Committee (TCC) were instrumental in the development of the scope of work – particularly regarding establishing goals and objectives of interested and affected parties. These committees provided clear direction requesting the District to adopt a more integrated approach to planning for the management of the District's water resources. Specific integration opportunities identified by the TCC and BACs included examining the costs and benefits of various plan implementation activities, avoiding redundancy, and gaining a better understanding of which actions may yield unanticipated benefits or consequences.

Other features of the plan update (many of which were either recommended or reinforced by TCC or BAC input) will address a range of water use sectors. For example, the 2016 plan update will also include expanding and enhancing commercial water conservation actions, septic management improvements, incorporating any necessary changes based on the pending review and approval of Georgia EPDs Indirect Potable Reuse Guidelines, and watershed improvement project implementation strategies. In order to reduce both our environmental footprint and printing costs, preliminary review drafts will be handled electronically. The plan will also include electronic indexing and hyperlinks to related plan elements to improve navigation. Printings of the final approved plan will also be limited.

Integrated Planning

The concept of integrated water planning is not new. In fact, integrated approaches to regional water planning are a requirement in several states. In practice, however, integrated planning can look very different from region to region depending on the level and mix of qualitative and quantitative analyses performed. The District's approach, based on analysis of a variety of different plans, will start with a single integrated management plan that will encompass a comprehensive qualitative assessment of how current and proposed action items impact the full range of water resources instead of looking only at single categorical benefits.

This new single planning document will include executive summary and introduction sections detailing the benefits identified through this enhanced integrated planning approach. The remainder of the plan will include sections for water supply and water conservation, wastewater and watershed management as well as public education and outreach. The action item formats will also likely be revised to better highlight their multiple benefits and to cross-reference other action items that achieve similar or related outcomes. Each action item will also be revised to address regulatory requirements (if any), and other benefits identified through this more comprehensive integrated planning approach.

Additionally, the District's approach will also include an analytical, or quantitative, dimension involving the development, use and interpretation of results of an integrated water resources model. The integrated model, which will be used to support both the 2016 plan update and planning and implementation in future years, will likely include a hydrologic and hydraulic watershed component designed to evaluate a few small sample watersheds each representing different land uses and related variables. The model will have manipulative capabilities so that existing and proposed plan requirements could be simulated and assessed for impacts on both water quality and water supply.

Evaluating Funding to Enhance Implementation

The plan update will also include an update to the "Implementation Funding Section." A hallmark of integrated planning is achieving multiple benefits; therefore including innovative funding and implementation strategies is consistent with the District's approach to enhanced integrated water planning. For this topic, the update will refine the existing implementation funding options and reflect new (for the District at least) funding strategies to reflect an integrated approach to water management. We anticipate these "new and innovative" funding approaches may include leveraging loans and grants, combining different grants and funding sources for a single project, and using local funds to enhance

grants, loans, and other state and federal sources of funding. We fully expect additional research as well as TCC and BAC coordination will highlight options not yet under consideration. The updated plan will also include case studies illustrating how local governments and utilities have implemented projects using creative funding approaches.

In summary, the 2016 water resource management plan will move the District forward by updating its water resource data and forecasts and incorporating integrated planning strategies into the evaluation of existing and proposed management requirements. These elements will provide the District's governments and utilities with the strong foundation needed to support plan implementation.

Summary Reports of Fall Meetings of Four River Basin Advisory Councils (BAC)

Chattahoochee BAC -Based on information submitted by Jim Warner

The Chattahoochee Basin Advisory Council met October 15, 2014 at the Manheim-Cox Auto Auction Georgia located in southwest Atlanta. The first agenda item was the election of the BAC Chair. Jack Gleason volunteered as candidate, but as no quorum was present, voting was to be by email.

A district plan update was presented (see report by Danny Johnson). A RFP is to be sent to BAC members for comments in November or December, 2014. An update on the July Joint BAC meeting was given, including "Deep Dive" comments from breakout sessions. Under Watershed, the first item was to consider the role of lakes in the watershed.

A tour and presentation of Manheim-Cox Auto Auction Georgia conducted by Aaron Brown, Manager, Engineering, Alternate Energy and Business Continuity, gave the company's water conservation initiatives. Manheim Georgia Facility processes about 2,000 cars per week and sells about 1,000. Auctions are conducted on site with about 500 participants and another 800 simultaneously via Internet. Manheim Georgia operates the site as a service and does not own cars which come in on consignment; they service, maintain, paint and detail cars per client needs. Participants in Manheim Georgia auctions must be auto licensed dealers, no private individuals. Manheim Georgia utilizes a large amount of water to operate its business. Using a state-of-the-art facility, Manheim Georgia is able to reduce its daily water demand by 60 percent and return treated water to the Fulton County Municipal Water Department in a pretreated condition. The facility treats 15,000 gallons of wastewater and produces 9,000 gallons of high quality reusable water per day. Wastewater from the vehicle detailing operation is transferred into a state-of-the-art bioreactor tank where micro-organisms convert organic materials (i.e. soap, oil, grease) into carbon dioxide. An ultra-filtration membrane separates suspended solids not consumed by the micro-organisms and reverse osmosis removes dissolved solids, improving water quality to better than the original water used. Annually, the Manheim Georgia Water Conservation Center extracts more than 24 tons of contaminants from the wastewater. The Water Conservation Center operated by the company in Manheim, Pennsylvania treats 42,000 gallons of wastewater per day.

Coosa-Etowah BAC Meeting - Based on information provided by Marty Williams

The Coosa River Basin Advisory Committee met October 8 at the Cherokee County Administration Building in Canton, GA. Doris Cook opened the meeting and solicited nominees for the Coosa BAC and the election was held later by email after biographical information about the candidates (Bruce Coyle and Gladney Cooper) was sent to the Council. [Bruce Coyle was elected].

Danny Johnson summarized the major talking points from breakout sessions at the July 2014 Joint BAC meeting and provided a summary of the August 2014 Governing Board meeting which included a panel discussion on integrated planning. He also reviewed the process of updating the State Water Plan (see the article by Danny Johnson in this edition of Watermarks).

Randy Flint of the U.S. Army Corps of Engineers presented an overview of the Allatoona Lake dredging program operation that included the following points:

- The Dredging operation receives zero dollars in federal funding.
- There are sensitive cultural sites where dredging cannot take place.
- Some of the reasons for dredging include: storage capacity, and flood control (which is the most important for Lake Allatoona).
- The dredging is performed through market driven-contracts for removal and sale of sand. During the housing boom the private contractors were selling a lot of sand while at the same time more sand was coming back into the lake from land development erosion. The private company only dredges as much sand as can be sold.
- Going forward there may be spot dredging to clean up some of the tributaries and water quality.

Following the meeting, Heath Lee gave a tour of the Hickory Log Creek Dam and Reservoir. It is the deepest reservoir outside of Army Corps and Georgia Power lakes in the state of Georgia.

Lake Lanier BAC and Oconee BAC - Based on information submitted by William Tietjen

The Lake Lanier and Oconee Basin Advisory Councils met jointly at the Lake Lanier Management Office, October 7, 2014. Mr. Tim Rainy, Lake Operations Manager, welcomed the group. The first item on the agenda was the election for BAC Chairs. Mr. Val Perry was elected Chair of the Lake Lanier BAC. A quorum of Oconee members was not present so election of the Chair for that BAC was delayed. Later, by electronic election, Ms. Jill Stachura was elected Oconee BAC Chair.

Mr. Danny Johnson of the Metro Water District presented an update on the 2016 District Plan. (See article elsewhere in newsletter.) Mr. Johnson also provided a report on the July Joint BAC meeting in Atlanta. Mr. Johnson gave an update on the Lake Lanier Stakeholders. It was noted in that update that Lake Lanier is listed for chlorophyll *a*. There was concern expressed that the Georgia EPD was checking for Chlorophyll *a* only, however, it was pointed out that other parameters were also measured and that this was the only one not meeting with standards.

Russell Lundstrum and Craig Sowers of the Corps of Engineers discussed sedimentation and dredging in Lake Lanier. Sedimentation appears to be correlated, in part, to parts of the lake shore where there is a greater number of docks, which seems correlated to a greater number of access roads. Dredging operations occur in the mouths of the two main rivers forming Lake Lanier. These operations reduce the amount of sediment coming from upstream but have no impact on sediment from other sources. Mr. Rainy pointed out the importance of recognizing the value of a resource such as Lake Lanier and the need to do those things that reduce sediment and other detrimental action in the lake.

An update on the Glades Reservoir was delayed to a later date.

President's Corner **continued from page 1:**

At our October board of directors meeting, several interesting matters were discussed:

Lake University- Susan Wilde is planning a C.E. credits workshop for professionals for **Athens in the Spring**; Ravi Malik is working on putting one together at **Albany. Coordinators are needed to get several more scheduled in different locations around the state**. There seems to be a consensus among board members that weekdays and evenings are options and that in the future we probably will avoid fall Saturdays. Please give this some thought. **A coordinator, a venue and a date gets the ball rolling…**

Susan Wilde borrowed an idea from an event she attended recently where she learned about programs being offered in South Carolina and Florida to elementary and middle school science teachers. **The goal is to equip them with fun and creative ways to teach students about lake ecology.** This may be something we want to develop and offer this summer, since it strikes at the very heart of what we're about. I have already mentioned the idea to the staff at Stone Mountain, so we may have at least one option for a location unless someone has a better idea. **We need someone to step up and take on this project.** I'm sure others will assist, but a coordinator to manage and develop the concept is needed to bring it to fruition. I'm certain Susan will share what she learned, but her plate is too full to take this on herself. If this strikes your fancy, here's your project!

Adopt-A-Lake (AAL) continues to inch forward. Mickey Desai, with the help of several others, is spearheading an effort to get a training video produced that can be incorporated into Adopt a Lake training sessions.

Lake Inventory- Phase 1 anticipated by Jan 1. For an initial focus of Georgia's lakes, Rob Randall and Susan Wilde have agreed to narrow the nearly 100k "lakes" in the state (identified by Rob with the help of GIS) to a more manageable 500 within the north/northeastern part of the state. We are looking for volunteers to help in other parts of the state.

Marty Williams continues to be the heart and soul of GLS, working tirelessly on the details necessary to keep us stitched together. She could use some help. Anyone with organizational skills looking for a place to plug in, I bet Marty would share with you part of her load. I can't imagine where GLS would be without Marty!