



**Georgia  
Lakes  
Society**

<http://georgialakes.org>

# GLS E-NEWS

*Committed to  
Protecting and Preserving  
Georgia's Lakes*

## **PRESIDENT'S CORNER - Summer 2014**

In June the GLS board of directors, along with anyone interested in attending, got together for a "Board Retreat." Momentum and excitement within GLS seems to be growing as the organization eagerly looks toward the future and addressing some of the water issues within the state of Georgia.

How many impounded estuaries are there in the state? The answer may take several years to assemble, but an effort is underway that may one day provide a definitive answer. The actual number may be a shock to some of us!

There are now several Lake University workshops in the planning stages – two currently on the calendar are for Milledgeville on September 25 and Stone Mountain Park on October 11. In the works are for Athens this winter and another in the early planning stages for Albany. These workshops are a great vehicle for progressing toward our goal of educating waterfront managers and property owners using the amazing assortment of expertise within the GLS family.

Adopt-A-Lake is now ready for implementation. This will provide hands-on real-world actionable activities for people interested in monitoring the health of our impounded waters. It should also help create an increase in general membership.

Anyone interested in spearheading a fundraising fishing tournament please let us know. We have some great ideas, but need someone to pick up the ball and make it happen.

Mark Johnson

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### **Membership & 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 nominal:

Individual membership – \$20

Family membership – \$25

Student membership – FREE

Nonprofit / Public Not for Profit – \$50.00

Corporate membership – \$100

Sustaining: – \$250 (includes one registration for GLS' annual meeting)

### **E-NEWS Administration**

The E-news goal is to enhance communications among GLS members and with academic, business, community and government interests. E-news is an Adobe pdf, distributed via email, and posted on GLS web site. The E-NEWS Editor solicits comments, ideas and future news pieces at [glg@georgialakes.org](mailto:glg@georgialakes.org).

# Lake Inventory Initiative - concepts & implementation

By Jim Warner

## Introduction

At the GLS Board of Directors Retreat on June 28, an initiative was discussed to compile a Georgia Lake Inventory. Reactions were: 1) there are a lot of lakes; 2) such an inventory would be quite useful for understanding, study and analysis of lake issues; and 3) a comprehensive, uniform resource for lakes information is not currently available.

Preliminary investigations provided a sense of what information is available, where it resides, and how it might bear on collecting for the Lake Inventory. We are now moving toward approaches to start the work.

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## Lake Inventory Concepts – a four phased approach

### Phase 1 Getting Started

Rob Randall volunteered to start the collection of data by downloading some 96,000 lake polygons from the United States Geological Survey (USGS) National Hydrology Dataset (NHD) for about 70% coverage in the state. This provides a good starter dataset with GPS data for each polygon and other identifying data.

Concurrently, Jim Warner downloaded the National Map features for Georgia. Of the 54 features identified in Georgia counts, key features are: 814 lakes, 4,021 reservoirs and 3,281 dams (pond is not a feature in this dataset). National Map features are used for map production; lakes not found on maps likely are not in the National Map features dataset yet. Such is the case with the 46-acre lake in my backyard which was constructed in 1998-99 although it does appear as a waterbody in the Forsyth County GIS data.

US Army Corps of Engineers (USACE) maintains the National Inventory of Dams (NID) (<http://geo.usace.army.mil/pgis/f?p=397:1:0::NO>) and Georgia has 5,132 dams in that inventory.

The report “Water Quality in Georgia 2010-2011” Chapter 3, “Water Quality Monitoring and Assessment” indicates there are 11,813 lakes, reservoirs and ponds of which only 48 are over 500 acres. ([http://epd.georgia.gov/sites/epd.georgia.gov/files/related\\_files/site\\_page/Y2010\\_Chapter\\_3-5\\_2010\\_305b.pdf](http://epd.georgia.gov/sites/epd.georgia.gov/files/related_files/site_page/Y2010_Chapter_3-5_2010_305b.pdf))

Phase 1 conclusions so far are: ● there are wide disparities between datasets in numbers of lake-like water bodies, and ● the datasets ought to be synchronized with common identifications and locations. Data from various sources such as EPD 303(d) impaired waters documents, Georgia Soil & Water Conservation Commission (GSWCC) data (<http://gaswcc.georgia.gov/>), USACE data and USGS data from the same Georgia ballpark and ought to be relatable.

### Phase 2 Basic Data Availability

Basic Data would include the GIS and Spatial Data core as well as additional data which is directly joined or resides with the Lake Inventory. Two primary USGS data sources are the National Hydrography Dataset (NHD) (<http://nhd.usgs.gov/>), the surface water component, and The National Map (<http://nationalmap.gov/>). The core data for the Georgia Lake Inventory will likely be drawn from these two national resources to be consistent with those systems and facilitate future feedback and updates. A Georgia Lake Inventory dataset needs to be defined with a data dictionary specifying attributes and allowable entries for each attribute; much of this definition will be inherited in results of Phase 1 from NHD and from consideration of the National Map features. This must be available to spread out the work and perform the Phase 4 Field Confirmations and Surveys to achieve consistent verifications and to prepare feedback and updates to USGS likely through State or local government agencies.

(Continue >>)

## Lake Inventory Initiative - concepts & implementation (Continued)

The NHD is a digital vector dataset used by geographic information systems (GIS) and contains features such as lakes, ponds, reservoirs, streams, rivers, canals, dams and stream gages. These data are designed to be used in general mapping and in the analysis of surface-water systems. The initial data definitions will draw from the data associated with the 96,000 polygon collected so far and the USGS National Map. US Topo—Topographic Maps for the Nation, is the next generation of topographic maps from the USGS. National Map features include attributes for:

FEATURE_ID	FEATURE_NAME	FEATURE_CLASS	STATE_ALPHA	
STATE_NUMERIC	COUNTY_NAME	COUNTY_NUMERIC		
PRIMARY_LAT_DMS	PRIM_LONG_DMS	PRIM_LAT_DEC	PRIM_LONG_DEC	
SOURCE_LAT_DMS	SOURCE_LONG_DMS	SOURCE_LAT_DEC	SOURCE_LONG_DEC	
ELEV_IN_M	ELEV_IN_FT	MAP_NAME	DATE_CREATED	DATE_EDITED

Initially the Lake Inventory data attributes would be from results of Phase 1 based on availability and ease of data acquisition. Attributes should include lake name (and associated dam if different), Lat/Long of one or more lake locations, area/extent of the lake in acres, owner/operator of the lake, county(ies) where lake is located (some border other states), name(s) of inflow and outflow streams and rivers, HUC identification, etc.

Work is needed to refine details of what data attributes are essential to the creation and maintenance of the Lake Inventory along with constraints on scope and size of the Inventory holdings. For example, the 2009 NLA features within the survey scope had to be a natural or man-made freshwater lake, pond or reservoir, greater than 10 acres (4 hectares), at least 3.3 feet (1 meter) deep, and with a minimum of a quarter acre (0.1 hectare) open water; excluded were the Great Lakes, the Great Salt Lake, commercial treatment and/or disposal ponds, brackish lakes, or ephemeral lakes.

### Phase 3 Associated Data Availability

Associated Data would include data and information external to the Lake Inventory that could be joined or linked with Basic Data for specific purposes. Work is needed to identify data, links and processes for associations. The Lake Inventory ideally could link to detail sources for:

- Detailed Lake and Dam characteristics,
- Watersheds and river basin information,
- EPD data for 305(b)/303(d) Lists of Waters,
- EPA National Lake Assessment (NLA) reports of 2009 and 2014,
- USACE and USGS data,
- Adopt-A-Stream (link to [www.GeorgiaAdoptAStream.org](http://www.GeorgiaAdoptAStream.org)) and Adopt-A-Lake data,
- Site-specific studies and information, and
- Other libraries and reference material.

### Phase 4 Field Confirmations and Surveys

Activities in this phase would compare the Lake Inventory data against on-the-ground and local sources to confirm validity [to some degree] and more importantly identify water bodies that are not reflected in the Inventory. Below are some anecdotal situations that could arise from a confirmation and survey process.

Case in point is a 46-acre Longlake in Forsyth County impounded in 1998-99 does not appear as a feature on the USGS National Map; it does however appear clearly in aerial imagery. Not appearing on the National Map is probably the reason it does not appear on sources such as topo and commercial street maps.

The Forsyth County GIS basemap does not include the Longlake feature while it does include a nearby feature Lake Lanier which was impounded in 1988. However when the Waterbody layer is selected Longlake appears. The Waterbody layer also displays a significant number of features nearby which are not part of the basemap, hence are added from GIS holdings and associated data. Aerial images may also provide location and lake extent data to fill-in pieces.

Google Maps as well as street maps, e.g., ADC Street Map Books, could also be useful in the confirmation and survey process, and may likely provide fill-in data for water bodies not in the Lake Inventory.

Defining characteristics for any lakes to be added to the Lake Inventory necessitates some nomination and acceptance criteria. In existing lists, waterbodies are noted with an extent or surface area down to one acre. Guidelines need to be established for this effort and there needs to be consideration for exceptions to guidelines; see Phase 2 Basic Data Availability.

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## Lake Inventory Initiative - concepts & implementation (Continued)

### Organizing for Phase 4 Field Confirmations and Surveys

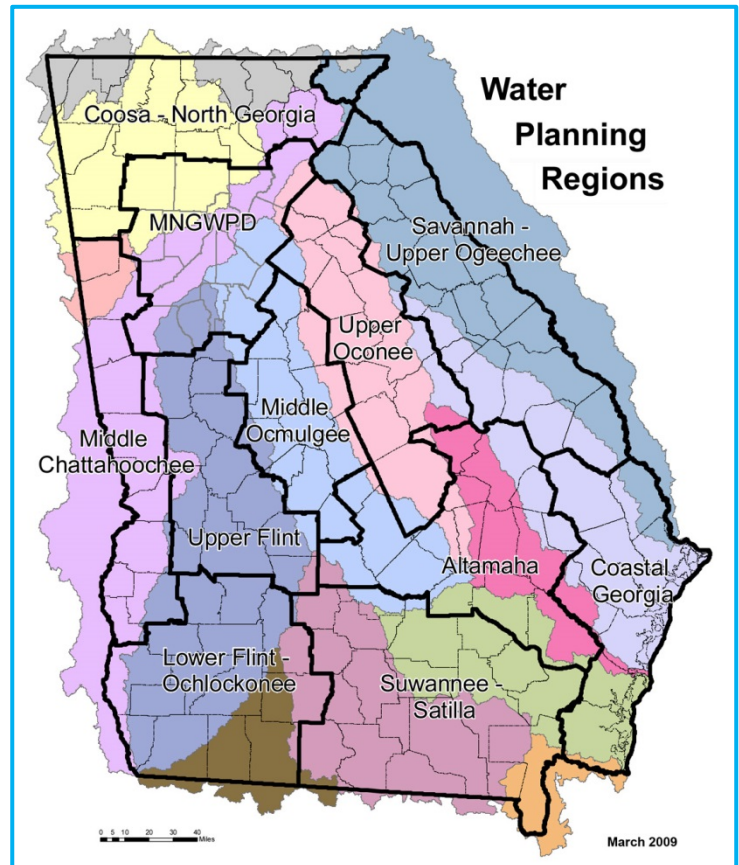
**Walk the Walk** – Volunteer Field Survey Teams can be assigned one or more counties to perform Phase 4 Field Confirmations and Surveys. Each team should have at least two members collaborating on the effort. Ideally a GLS member would be on each team, otherwise teams would need GLS points of contact. High school and university student volunteers could provide valuable associations and contributions to the Lake Inventory effort as well as peripheral studies and analyses using the Inventory resource. Initially Field Survey Teams efforts would be limited in scope for data evaluation and to evolve techniques and processes for the field work.

**Talk the Talk** – GLS needs to engage State and local governments to provide the GLS perspectives and promote the Lake Inventory Initiative. Working with government partners will be key to utilizing Lake Inventory findings and in particular providing feedback and updates to USGS.

**State View** – The Georgia State-wide Water Management Plan (State Water Plan) was adopted by the General Assembly in January 2008. Visit <http://www.georgiawaterplanning.org/> for information. The State Water Plan calls for the establishment of ten water planning regions across the state, each guided by a regional water planning council. An additional region is the Metropolitan North Georgia Water Planning District (MNGWPD), which has six basin advisory councils (BACs) and a separate water planning process. GLS has several volunteers on these BACs: – Bev Nichols, Mary Mayhew, Hap Tietjen, Jim Warner and Marty Williams. If you would like to be involved in this effort contact Jim Warner, or email [gl\\_s@georgialakes.org](mailto:gl_s@georgialakes.org).

### Regional Water Planning Councils

Regional councils would be logical associates in the efforts to conduct Phase 4 Field Confirmations and Surveys. In the Regional Council list below, the first link for each region leads to its web site. The second Fact Sheet link goes to a 2-page summary of the council's activities and provides a regional map. The third link is to the Region's Water Plan; most plans are dated from 2011. Counties in each region are listed for reference. All 159 Georgia counties are included in these water planning arrangements.



### Regional Council Listing

- **Altamaha** <http://www.altamahacouncil.org/>  
**Fact Sheet** <http://www.georgiawaterplanning.org/documents/ALTAMAHA.pdf>  
**Water Plan** [http://www.altamahacouncil.org/documents/ALT\\_Adopted\\_RWP.pdf](http://www.altamahacouncil.org/documents/ALT_Adopted_RWP.pdf)  
Region's 16 counties: Appling, Bleckley, Candler, Dodge, Emanuel, Evans, Jeff Davis, Johnson, Montgomery, Wheeler, Wilcox, Tattnall, Telfair, Toombs, Treutlen, and Wayne
- **Coastal Georgia** <http://www.coastalgeorgiacouncil.org/>  
**Fact Sheet** <http://www.georgiawaterplanning.org/documents/COASTAL.pdf>  
**Water Plan** [http://www.coastalgeorgiacouncil.org/pages/our\\_plan/Coastal\\_Georgia\\_Regional\\_Water\\_Plan.php](http://www.coastalgeorgiacouncil.org/pages/our_plan/Coastal_Georgia_Regional_Water_Plan.php)  
Region's 9 counties: Bryan, Bulloch, Camden, Chatham, Effingham, Glynn, Liberty, Long, & McIntosh
- **Coosa - North Georgia** <http://www.coosanorthgeorgia.org/>  
**Fact Sheet** [http://www.georgiawaterplanning.org/documents/COOSA-NORTH\\_GEOORGIA.pdf](http://www.georgiawaterplanning.org/documents/COOSA-NORTH_GEOORGIA.pdf)  
**Water Plan** [http://www.coosanorthgeorgia.org/documents/CNG\\_Adopted\\_RWP.pdf](http://www.coosanorthgeorgia.org/documents/CNG_Adopted_RWP.pdf)  
Region's 18 counties: Catoosa, Chattooga, Dade, Dawson, Fannin, Floyd, Gilmer, Gordon, Habersham, Lumpkin, Murray, Pickens, Polk, Towns, Union, Walker, White, and Whitfield

(Continue >>)

## Lake Inventory Initiative - concepts & implementation (Continued)

### Regional Council Listing (Continued)

- [Lower Flint - Ochlockonee](http://www.flintochlockonee.org/) [http://www.flintochlockonee.org/  
Fact Sheet](http://www.flintochlockonee.org/Fact Sheet) [http://www.georgiawaterplanning.org/documents/LOWER\\_FLINT-ochlockonee.pdf](http://www.georgiawaterplanning.org/documents/LOWER_FLINT-ochlockonee.pdf)  
[Water Plan](http://www.flintochlockonee.org/pages/our_plan/Lower_Flint_Ochlockonee_Regional_Water_Plan.php) [http://www.flintochlockonee.org/pages/our\\_plan/Lower\\_Flint\\_Ochlockonee\\_Regional\\_Water\\_Plan.php](http://www.flintochlockonee.org/pages/our_plan/Lower_Flint_Ochlockonee_Regional_Water_Plan.php)  
Region's 14 counties: Baker, Calhoun, Colquitt, Decatur, Dougherty, Early, Grady, Lee, Miller, Mitchell, Seminole, Terrell, Thomas, and Worth
- [Metropolitan North Georgia Water Planning District](http://www.northgeorgiawater.org/) [http://www.northgeorgiawater.org/  
Fact Sheet](http://www.northgeorgiawater.org/Fact Sheet) [http://www.georgiawaterplanning.org/documents/Revised\\_20110706\\_Metro\\_Fact\\_Sheetcopy.pdf](http://www.georgiawaterplanning.org/documents/Revised_20110706_Metro_Fact_Sheetcopy.pdf)  
[Water Plan](http://www.northgeorgiawater.org/plans/watershed-management-plan) <http://www.northgeorgiawater.org/plans/watershed-management-plan>  
District's 15 counties: Bartow, Cherokee, Clayton, Cobb, Coweta, DeKalb, Douglas, Fayette, Fulton, Forsyth, Gwinnett, Hall, Henry, Paulding, and Rockdale
- [Middle Chattahoochee](http://www.middlechattahoochee.org/) [http://www.middlechattahoochee.org/  
Fact Sheet](http://www.middlechattahoochee.org/Fact Sheet) [http://www.georgiawaterplanning.org/documents/MIDDLE\\_CHATTAHOOCHEE.pdf](http://www.georgiawaterplanning.org/documents/MIDDLE_CHATTAHOOCHEE.pdf)  
[Water Plan](http://www.middlechattahoochee.org/documents/MCH_Adopted_RWP.pdf) [http://www.middlechattahoochee.org/documents/MCH\\_Adopted\\_RWP.pdf](http://www.middlechattahoochee.org/documents/MCH_Adopted_RWP.pdf)  
Region's 11 counties: Carroll, Chattahoochee, Clay, Haralson, Harris, Heard, Muscogee, Quitman, Randolph, Stewart, and Troup
- [Middle Ocmulgee](http://www.middleocmulgee.org/) [http://www.middleocmulgee.org/  
Fact Sheet](http://www.middleocmulgee.org/Fact Sheet) [http://www.georgiawaterplanning.org/documents/MIDDLE\\_OCMULGEE.pdf](http://www.georgiawaterplanning.org/documents/MIDDLE_OCMULGEE.pdf)  
[Water Plan](http://www.middleocmulgee.org/pages/our_plan/Middle_Ocmulgee_Regional_Water_Plan.php) [http://www.middleocmulgee.org/pages/our\\_plan/Middle\\_Ocmulgee\\_Regional\\_Water\\_Plan.php](http://www.middleocmulgee.org/pages/our_plan/Middle_Ocmulgee_Regional_Water_Plan.php)  
Region's 12 counties: Bibb, Butts, Crawford, Houston, Jasper, Jones, Lamar, Monroe, Newton, Peach, Pulaski, Twiggs
- [Savannah - Upper Ogeechee](http://www.savannahupperogeechee.org/) [http://www.savannahupperogeechee.org/  
Fact Sheet](http://www.savannahupperogeechee.org/Fact Sheet) [http://www.georgiawaterplanning.org/documents/SAVANNAH-UPPER\\_OGEECHEE.pdf](http://www.georgiawaterplanning.org/documents/SAVANNAH-UPPER_OGEECHEE.pdf)  
[Water Plan](http://www.savannahupperogeechee.org/pages/our_plan/documents/SUO_Adopted_RWP.pdf) [http://www.savannahupperogeechee.org/pages/our\\_plan/documents/SUO\\_Adopted\\_RWP.pdf](http://www.savannahupperogeechee.org/pages/our_plan/documents/SUO_Adopted_RWP.pdf)  
Region's 20 counties: Banks, Burke, Columbia, Elbert, Franklin, Glascock, Hart, Jefferson, Jenkins, Lincoln, Madison, McDuffie, Oglethorpe, Rabun, Richmond, Screven, Stephens, Warren, Wilkes, and Taliaferro
- [Suwannee - Satilla](http://www.suwanneesatilla.org/) [http://www.suwanneesatilla.org/  
Fact Sheet](http://www.suwanneesatilla.org/Fact Sheet) <http://www.georgiawaterplanning.org/documents/SUWANNEE-SATILLA.pdf>  
[Water Plan](http://www.suwanneesatilla.org/documents/SSA_Adopted_RWP.pdf) [http://www.suwanneesatilla.org/documents/SSA\\_Adopted\\_RWP.pdf](http://www.suwanneesatilla.org/documents/SSA_Adopted_RWP.pdf)  
Region's 18 counties: Atkinson, Bacon, Ben Hill, Berrien, Brantley, Brooks, Charlton, Clinch, Coffee, Cook, Echols, Irwin, Lanier, Lowndes, Pierce, Tift, Turner, and Ware
- [Upper Flint](http://www.upperflint.org/) [http://www.upperflint.org/  
Fact Sheet](http://www.upperflint.org/Fact Sheet) [http://www.georgiawaterplanning.org/documents/UPPER\\_FLINT.pdf](http://www.georgiawaterplanning.org/documents/UPPER_FLINT.pdf)  
[Water Plan](http://www.upperflint.org/documents/UFL_Adopted_RWP.pdf) [http://www.upperflint.org/documents/UFL\\_Adopted\\_RWP.pdf](http://www.upperflint.org/documents/UFL_Adopted_RWP.pdf)  
Region's 13 counties: Crisp, Dooly, Macon, Marion, Meriwether, Pike, Schley, Spalding, Sumter, Talbot, Taylor, Upson, and Webster
- [Upper Oconee](http://www.upperoconee.org/) [http://www.upperoconee.org/  
Fact Sheet](http://www.upperoconee.org/Fact Sheet) [http://www.georgiawaterplanning.org/documents/UPPER\\_OCONEE.pdf](http://www.georgiawaterplanning.org/documents/UPPER_OCONEE.pdf)  
[Water Plan](http://www.upperoconee.org/documents/UOC_Adopted_RWP.pdf) [http://www.upperoconee.org/documents/UOC\\_Adopted\\_RWP.pdf](http://www.upperoconee.org/documents/UOC_Adopted_RWP.pdf)  
Region's 13 counties: Baldwin, Barrow, Athens-Clarke, Greene, Hancock, Jackson, Laurens, Morgan, Oconee, Putnam, Walton, Washington, Wilkinson

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### Geographic Names Information System (GNIS)

The U.S. Board on Geographic Names (BGN) maintains uniform geographic name usage throughout the Federal Government (link to <http://geonames.usgs.gov/>). The Geographic Names Information System (GNIS) is the Federal and national standard for geographic nomenclature developed by the U.S. Geological Survey as the official repository of domestic geographic names data, the official vehicle for geographic names use by the Federal Government, and the source for applying geographic names to Federal electronic and printed products.

Extracts from the Geographic Names Information System can be download as pipe-delimited text (.txt) files within a compressed (.zip) format. These files contain primary feature attributes, but not all attributes (link to [http://geonames.usgs.gov/domestic/download\\_data.htm](http://geonames.usgs.gov/domestic/download_data.htm)). A download of all Georgia features has 62,468 data lines (including a few neighboring in AL, FL, SC, TN). The download can be imported into Excel worksheets for sorting and manipulation. This web page provides other query capabilities as well.

## Calendar

### Coming events:

- September 24, 2014 NCLMS Fall Workshop - Lake Management via Aeration at Lake Wheeler Park in Raleigh, NC.  
<http://www.nclakemanagement.org>
- September 25, 2014 **Lake University 5:30 pm to 8:30 pm** in the GCSU Arts and Sciences Auditorium  
231 W. Hancock St. Milledgeville, GA 30087; chair Bobby Dunn, for info email [gls@georgialakes.org](mailto:gls@georgialakes.org)
- October – Next GLS board meeting –in conjunction with Oct 11<sup>th</sup> Lake University session
- October 11, 2014 **Lake University at Stone Mountain, GA**; chair Henry Johns, for info email  
[gls@georgialakes.org](mailto:gls@georgialakes.org)
- November 12 – 14, 2014 **NALMLS 2014 – 34th International Symposium**, at Tampa, FL  
<http://www.nalms.org/home/conferences-and-events/conferences-and-events.cmsx>
- December 3, 2014 **Georgia Water Coalition (GWC) Partners** meeting at the Alcovy Conservation Center in  
Covington, GA, <http://www.garivers.org/gawater/events.html>
- March 14, 2015 **Confluence 2015**, Gwinnett Environmental & Heritage Center in Buford, GA

### Planned events:

- Winter 2015 **Lake University at Athens**; chair Susan Wilde, for info email [gls@georgialakes.org](mailto:gls@georgialakes.org);  
to be directed toward professionals needing Continuing Education credits.
- Spring 2015 **Lake University at Albany**; chair Ravi Malik, for info email [gls@georgialakes.org](mailto:gls@georgialakes.org)

### Past events of 2014:

- 2014 SE Lake & Watershed Conference Mar 26-28 2014 – NALMS in Ashville, NC – GLS representatives Bev  
Nichols and Marty Williams; Susan Wilde was a presenter.
- February 2014 Lake University in Athens; chair Susan Wilde, directed at professionals Continuing Education credits.

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## Assessing Silt in Your Lake or Pond

Prepared by Keith Gray, Integrated Lakes Management, Inc.

*This article describes practical techniques for assessing silt that should be done by lake owners or operators to confirm or reinforce understandings of buildups. If more details are needed to develop an action plan, a professional service company, knowledgeable in lake dredging, should be consulted.*

All water impoundments collect nutrients and sediment at various rates dependent on factors such as (but not limited to): erosion from within the water shed, velocity of flow, and type/size of material being carried in.

As lakes and ponds accumulate sediment, the issue of dredging often arises with little or no guidance on when dredging is warranted. To answer this question, water feature uses need to be considered, for instance:

- Recreation
- Habitat for sport or threatened & endangered species
- Storm water retention
- Watercraft access
- Irrigation/drinking water/fire suppression/cooling
- Conveyance
- Aesthetics

If the sediment impedes the intended use, then at a minimum some removal is warranted. Whole lake dredging is needed only in a small percentage of instances. While 3' of sediment in some ponds or some areas within lakes (boat docks, swimming areas, etc.) is very significant, 3' of sediment in 25' of water at the base of a dam may have virtually no negative effect on the water quality or use of the lake. Similarly, if there is 2' of added sand or gravel (i.e., material void of nutrients that would support algae or nuisance aquatic weed growth), it can be viewed and treated very differently than if there was 2' of the black mushy stuff that looks a lot like heavy topsoil. All factors need to be put into context.

Measuring sediment thickness in various locations (it is rare that sediment thickness is uniform throughout a lake or pond) and creating a map of the sediment as well as the original bottom (much like a topographical map of land) is a good starting point in accessing the need for any removal.

While there is new technology that will do a wonderful job of mapping the lake bottom, dense plant growth or soft sediment does not always register well with the default technique of using a pole from a boat. (Continue >)

## Assessing Silt in Your Lake or Pond (Continued)

The probe (generally a 1.5" PVC pipe with graduations marked) is lowered until it hits 'resistance'. That level is noted, and then the probe is pushed further until it hits hard bottom. The difference between the two measurements is the sediment thickness. For a smooth bottomed lake or pond with one inlet, the sediment accumulation will be more even than a situation where there are multiple inlets with bays and coves around the main body. In all cases, more measurements should be made closer to shore than in open water. For ponds (water bodies less than 10 acres), 20-50 data points should suffice to get usable data. For lakes (bodies >10 acres), three to five points per acre is a good guideline. Locating probe sites by GPS facilitates evaluation of sediment buildup at the same locations over time thus providing useful data for dredging decisions.

**Finding the Top of Soft Sediment.** In mature lakes and ponds that have years of top soil erosion mixed with various stages of decomposed leaves, grass clippings, and other light materials, it may be very difficult to determine the 'thickness'. This material may appear to be up to several feet deep, but when removed and dried it may occupy only 10% of the volume it does in water. Since the probe used for measuring thickness may never hit 'resistance', a useful technique that standardizes the measurement of this material is to use a Secchi disk. Lower the disk until the sediment supports the weight of it. Note the distance below the water surface, then probe next to it using the PVC, using the difference between the measurements as the sediment thickness.

This map shows results of a sediment assessment and indicates the analytical considerations in forming a potential action plan for remediation.

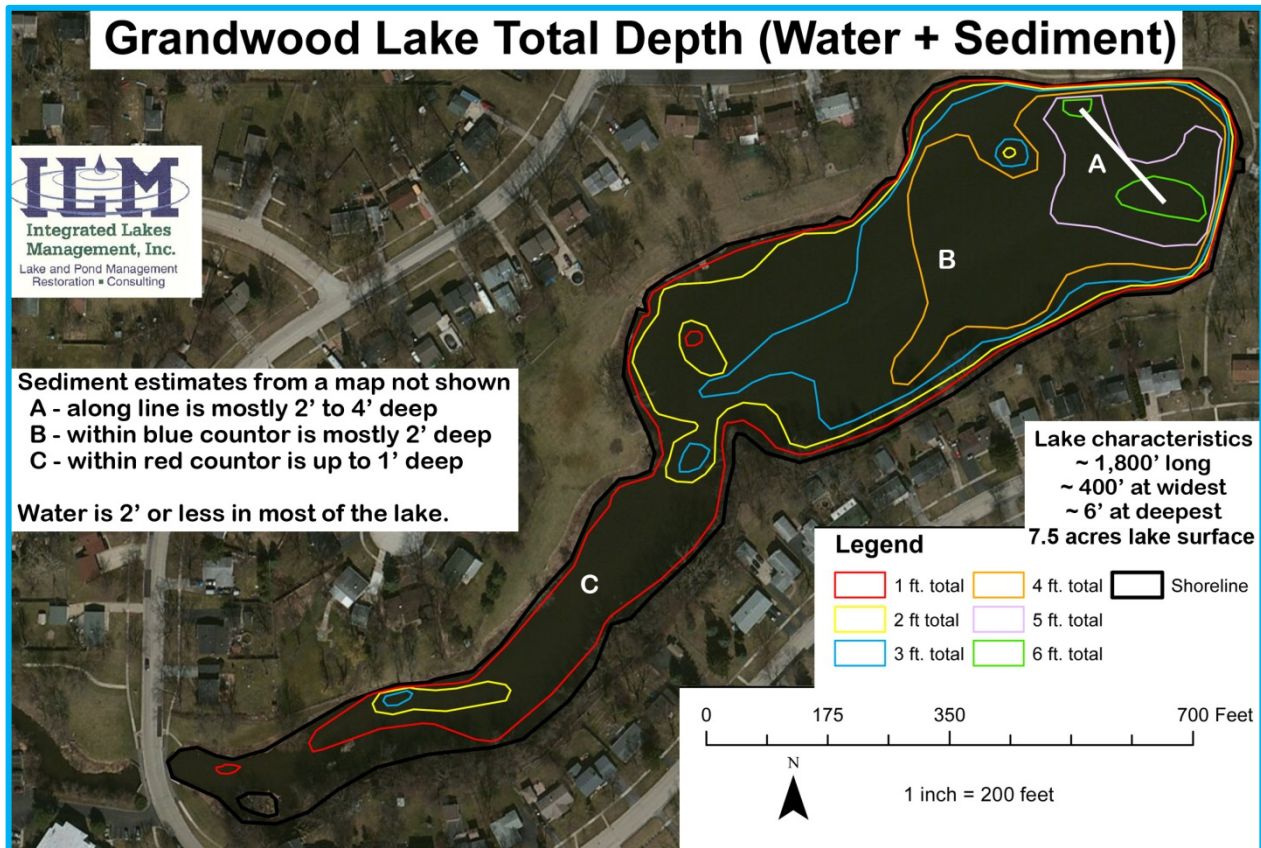


Figure 1 – Example Contour Map for Assessing Lake Silt Characteristics

There is no better time to get some idea of sediment 'type' or 'quality' than when doing the probing. Your equipment should have some sediment in or on it when you bring it up, which can be classified in broad terms: clay, sand, black muck, or something else? Expect that larger or heavier particles (sand and gravel) will settle out closer to the point of entry than will the small/fine clay particles that will stay suspended longer and ultimately settle and stay in deeper water.

In order to determine if dredging is needed, first determine what you want of your lake or pond. If its use is impaired, then determine where, how much, and what kind of sediment you have. From that, you can decide on the scale of work that needs to be done and the budget that may be needed.

