



# Friends of Lake Glenville

## Protect & Preserve Lake Glenville

Fall 2007

[www.friendsoflakeglenville.com](http://www.friendsoflakeglenville.com)

Howard M. Austin, Editor

Official Announcement: Annual FLG Meeting August 2, 2008 9am Glenville CDC

### Lake Clean Up – an every day event

Ray Jimison

Historically the “official” Lake clean-up day has been a one-day event traditionally held in the Spring just as everyone is gearing up for the summer season. This past year we had about 20 volunteers that participated in the clean-up day, including help from the Buck Knob Island Homeowners Association who donated our meeting place and sponsored their manager who provided a barge and help in collecting and hauling away debris. As usual we received good support from Lisa Leatherman at Duke Energy, donating garbage bags and hauling off the filled bags and debris. All-in-all this was a

*(Continued on page 4)*



Lake  
Clean Up  
2007

### Lake Glenville Water Quality 5: Ephemeral Nephels ?

Don Hansen

In the previous issue (Part 4) I described some of the most important inputs of suspended sediments to our lake. A fair question is to ask, “Doesn’t this sediment just sink to the bottom?” The answer: “Well yes, it does sink, but sinking can take a long time.” The sinking speed of sediment particles is proportional to their density and to the square of their size (Google *Stokes Law*). The sinking velocity of a sand-like particle (1mm, or 0.04 inch diameter spherical particle with the density of granite) is more than 100 feet per minute.

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Photo: Research Vessel *Glenville* at dock with aquatic technician Eva aboard.



### Mountain Musings:

Howard M. Austin, Editor

Now that it is fall turning into winter, Lake Glenville is quiet, with the boats moving across it probably being counted on one hand. The lake is probably clear, with a view of the lake bottom in ten to twenty feet of water even on Saturday afternoon. Any paddle craft on the lake will most likely enjoy a serene experience free of tsunami sized wakes or raucous noise.

When Spring and Summer 2008 arrive, how will the lake look? For one, we will have another “keyhole” development preparing to put more boat traffic on the lake. The Preserve at Eagle Crest ([www.thepreserveateaglecrest.com](http://www.thepreserveateaglecrest.com)) is advertising 40 lots off Cullowhee Mountain Road, with the text on

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### Schedule 2008

FLG Breakfast May 17, 2008

FLG Lake Clean Up May 31, 2008

FLG Breakfast June 21, 2008

Grand Summer Social July 19, 2008

FLG Breakfast and Annual Meeting August 2, 2008

FLG Breakfast September 20, 2008

# The President's Message Fall 2007

Carol Adams

It has been a glorious fall! Above normal temperatures, daily sunshine and very few rainy days have been the norm since Labor Day and the advent of the calendar's "official fall". A lack of rain, however, is a double edged sword.....everyone has loved it for outdoor activities but it is not good for our rain forest, lake levels, streams, gardens and crops. A continuing drought is predicted for 2008 according to some scientific reports. Despite the warm temps and little rain our leaf season debuted and as of this writing, in late October, we are at the color peak..... although about a week later than usual.

Many FLG members have closed their homes for the season but believe it or not each year many more members make Lake Glenville their permanent residence or extend their stay until Thanksgiving or even Christmas.

Although the official FLG season ends with our September breakfast and board meeting, the FLG Board and Committees, regardless of residence location, continue running the business and activities of the organization. Water quality volunteers, our treasurer, newsletter and email communicators, relicensing and community meeting attendees and yours truly all continue year-round obligations to keep us moving ahead.

Throughout the year we have often referred to our slogan that paraphrases our mission statement..... ***Protect and Preserve Lake Glenville***. With this reminder on our letterhead, communications, image brochure and weekly Crossroads Chronicle ad we are continually reminded of what is important to the organization and members.

Some of our programs and projects have transitioned (read have been accomplished) such as fundraising efforts in the past several years. However, our most important activities demand that we continue to adequately address the very serious issues affecting the lake and lake properties now and surely for the future. These issues include the threat of

watercraft overcrowding on the lake and the resulting decrease in boating safety, increased erosion and the heavy sedimentation and turbidity in the lake. An example of lake turbidity (cloudy lake water) comes from the records of Don Hanson, our lake water testing volunteer. In the 80's and early 90's the turbidity level in the lake was approximately 25'.... recently it was 8' and has at times been measured at 6'. Be assured that our water quality committees are doing everything within our range of possibility to correct this shameful fact.

How do we continue to *protect and preserve* Lake Glenville? It is certainly an ongoing project that requires plenty of time and volunteers. The lake clean-up event held each year is a good start. In addition we have obtained information from lakes throughout the country that also have overcrowding and erosion issues. We are investigating supplementary boating safety enforcement on the lake, and we are looking at reclassification of the lake that will allow a reduction of shoreline usage especially in coves.

To the credit of the many water testing volunteers we have five years of records that show that our incoming stream water quality is good. At this time it is lake water quality that needs more of our attention. To accommodate the lake testing initiative, incoming streams will now be tested bi-monthly and immediately after heavy rains to better determine the source of the run-offs. For the lake testing transition Doug Odell and Don Hansen have researched the purchase of more sophisticated and accurate lake water testing equipment. We are for applying for grants from various sources to help with this significant expense. Other members have met with county agencies and commissioners who control development and erosion, and we plan a campaign to inform all lake users on how to deter one of the primary shoreline eroding offenders.... watercraft speeding too close to shore especially in coves.

Our communications programs continue to

thrive and are an asset to members..... monthly breakfasts feature timely and appropriate speakers who share vital information, an improved website features event and lake information and current and previous newsletters. Increasing the use of email (be sure we have your correct email please) to announce events, meetings and other items has been met with much success.

Soliciting member renewals and new members is an important thread that runs through every organization, and FLG is no different. Our information brochure is distributed throughout the community in businesses and by realtors. We enlist our association presidents and all members to encourage neighbors and friends to become members. The greatest benefit of membership in FLG is that by doing so you support the only community organization that is solely dedicated to protect and preserve this lake and ultimately property values. Elevated membership numbers impress politicians, government agencies and other organizations who are our potential partners in protecting and preserving Lake Glenville.

Our committed position on the Duke Energy relicensing intervention initiated three years ago continues today with our partners, Jackson County government and other local organizations. This effort requires our tenacity and patience because the intervention challenges FERC to require Duke Energy to address favorable local and lake issues not included in Duke's relicensing application. Have we spent plenty of money so far? Yes! Have we won anything yet? No! Have they won anything yet? NO! We stand fast, with support from Jackson County, to require optimum lake levels all year, continued shoreline lease options for lake property owners, water releases from Lake Glenville for power generation only, not for kayaking in the gorge, and additional funds for public improvements at Andrews Park. Why are these issues so important? Because Duke Energy will be granted a 40 year license based on the items in their

## The President's Message Fall 2007 continued

### Carol Adams

application. If we do not argue for changes in the application now and use all means possible to win, Duke Energy will never grant those changes. They will know for the next 40 years that FLG and Lake Glenville property owners will be easy prey for any policy, prohibition or other course of action.

Our ongoing image building effort includes a weekly ad in the Crossroads Chronicle along with the widely distributed FLG informational brochure. Members can spread the word as well by flying an FLG flag on boats and docks or displaying an FLG decal on their car. The attractive

nylon flags are available for purchase now as are other FLG logo items. For purchases please see the logo ad in this newsletter

The 2007 season was not without social fun and frolic. An average of 45 members attend each monthly breakfast where attendees meet and greet old and new friends. The awesome 4th of July fireworks and annual July Grand Summer Social cocktail party at the Lake Club, attended by over 70 members, are event highlights each year. Some of our special interest groups...hikers, golfers and lunchtime ladies... are quite active.

In February 2008 the FLG Board of Directors will meet, as we have in the past two years, for a daylong retreat where we examine our activities of the past year and lay out an action plan for the coming year. Suggestions from members are especially appreciated and can be submitted to any board member (see the list with phone numbers and email address elsewhere in this newsletter) or by emailing to flg28736@yahoo.com.

Happy holidays, stay safe and well.....we will see you in the spring!!

## A Call for Volunteers

### FLG Volunteers Are Needed for the Following Committees

With a full plate of activities FLG's need for additional volunteers is real. Please check out the list below and call or email the committee chair for more information or to volunteer!

#### WATER QUALITY

Incoming Stream Water Quality Testing – gather water samples from incoming streams, transport samples to UNC Asheville

Lake Water Testing – assist in gathering water quality data from various lake locations

Lake Sedimentation and Turbidity Team – monitor erosion and run-off along the shoreline and into incoming streams; contact county, state and federal agencies as needed

**CONTACT DOUG ODELL @ 743-5079 or  
KEN KITCHENS @ 743-2960**

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#### SHORELINE MANAGEMENT/BOATING SAFETY

Help develop workable solutions to control lake overcrowding, unsafe boating practices, general lake safety and aesthetic amenities

**CONTACT HOWARD AUSTIN @ 743- 9494 or  
404-434-0599**

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**LAKE CLEAN-UP** (held on a Saturday in early June)  
Help organize the event

**CONTACT RAY AND GALE JIMISON @ 743-5293**

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#### COMMUNICATIONS

Corresponding Secretary - Send thank-you notes, letters, as needed by the board

Phone Committee - call members May thru September about FLG events and meetings

Mail Operations - help with stuffing, stamping and mailing FLG announcements, invitations etc

**CONTACT CAROL ADAMS @ 404 558-0377 or 743-1658**

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#### SOCIAL

Monthly Breakfasts - help with event logistics i.e nametags, menus, reservations

Grand Summer Social - general assistance in food preparation, set-up, clean-up, decorations etc

**CONTACT CAROL ADAMS @ 404 558-0377 or 743-1658**

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# Lake Clean-up – an every day event

Ray Jimison

(Continued from page 1)

good year for the clean-up effort and we can be proud that our Lake remains one of the most pristine and well cared for in the area.

This was my first year being responsible for the clean-up; I had participated as a volunteer in the past and like many of our members, believed I was doing my part to do so once a year. What I noticed that was different this year was that after the clean-up I was more aware of and felt a greater responsibility for garbage and debris that found its way into the Lake or onto the shoreline. Whenever we are out boating we now feel a responsibility to pick up garbage that is floating or collect items that may have washed ashore. It's unfortunate that it has taken this level of involvement to make me aware and now feel this responsibility, because it's a very easy thing to do. So that got me thinking about what changes we could make in our annual efforts. Here are some of my thoughts about what all of us can do to make clean-up more successful:

- Clean-up should be an every day event. When you are out on the lake and see debris or garbage floating by, stop to pick it up or even drag larger items to the launch ramp if need be.
- We need to involve more homeowner's associations and get the associations to take an active part in the annual clean-up event. The Buck Knob Island HOA made participation in Lake Clean-up a priority this past year, if we can get all the HOA's around the lake to do the same, we can double our efforts and results on the event day.

- We need to try to hold a clean-up event at a time while there is easier access to the shoreline. This is problematic because most summer residents are gone by late fall when the water level is down and they haven't arrived yet in early spring before the water levels start to rise. The suggestion to solve this is to ask everyone who comes for holiday and winter visits at the lake to take a walk along the shoreline and pick up anything that washed ashore. It's very relaxing and a beautiful time of year, and with easy access to the shore it makes trash pick-up simple. The same applies in the early spring. If you are at the lake, take a walk along the shoreline and think clean-up while enjoying your walk.
- If you kayak or canoe, we can use your help for clean-up as well. This past year the kayak crew, headed-up by Ike Eichhorn, brought in more garbage than all other sources. We can use more kayakers and jet skis this year to help get in close to those hard to reach areas.

Finally, we are planning the annual clean-up next spring for *Saturday, May 31, 2008*, so mark your calendars and plan to get involved. We really do have fun, it's a chance to meet other members you may not know, and you'll feel good about yourself when you know you have made a difference in keeping our lake clean. Plan to participate on May 31st; we need your help! I want to thank everyone who participated this past year and encourage all of our members to join us at the annual event and to make **Lake Clean-up** a personal goal and **an Every Day Event!**

Lake Clean Up 2007 - All Lake Clean Up photos by the Jimisons



# The Duke Relicensing Intervention Report

Often FLG members and other parties interested in the Duke Energy relicensing and our intervention will ask “Where are we now?” The answer can only be that we are in a bureaucratic limbo until the Federal Energy Regulatory Commission (FERC) rules to grant the license or not. If FERC rules in favor of Duke Energy thereby granting the new 40 year license, then we, along with our leading intervention partner, Jackson County Government, will decide whether to bring our case to the U.S. Court of Appeals. If the FERC addresses the many relicensing application opposition filings, they will require Duke Energy to include items requested by FLG and others in a revised application. (FLG items would require Duke Energy to include maintaining optimum lake levels all year, continued shoreline lease options for lake property owners, water releases from Lake Glenville for power generation only not for kayaking in the gorge and additional funds for public improvements at Andrews Park.)

FLG attorney, Philip Marston, and Paul Nolan, the county intervention attorney have built an incredible case citing actions by FERC in this case, and in hydro relicensings in other states, that are against energy law, against FERC rules and deemed bad policy. They have aligned us with other organizations and counties throughout the country who have filed similar protests as ours. In fact the National Association of Counties recently filed a formal protest to FERC for the lack of local consideration in the license settlements before them.

Another important player in the relicensing actions is the North Carolina Division of Water Quality (NCDWQ). Before FERC will act on any license, the licensee (in this case Duke Energy) must obtain a 401 Water Quality Certification from the NCDWQ. Basically the 401 Certification is an approval of all of the elements in the license that effect the water quality of the waters in the project.

One of the most contentious items in the Duke Energy relicensing application is the removal of the Dillsboro Dam. A majority of Dillsboro business owners and residents oppose the removal of the dam as does Jackson County Government. Because of the consequences of sediment release when a dam is removed, the NCDWQ enters the picture to determine if they will issue the 401 Certification for the removal. The removal of the Dillsboro Dam is a part of the entire Duke Energy relicensing application. A ruling by NCDWQ is crucial to the FERC granting a license to Duke Energy.

Although local newspaper readers may have read that there has been a 401 Certification for removal of the dam, that is not the fact. NCDWQ awarded a 401 Certification for the surrender of the Duke Energy license to operate the Dillsboro power generation project but has not granted a 401 Certification for the removal of the dam.

In late September FLG members Doug Odell and Carol Adams attended a NCDWQ public hearing about the removal of the Dillsboro Dam. The majority of speakers opposed the removal and many gave visual and anecdotal support to their positions. As of this writing no decision has been made by NCDWQ.

In the meantime, since Duke Energy has surrendered the Dillsboro license, Jackson County has applied for a temporary license to operate the Dillsboro project. Although the Dillsboro Dam is not a part of our intervention issues, FLG has supported the county positions and vice versa.

At this time FLG board members and our attorney Philip Marston are merely monitoring the FERC website for related filings and rulings. How long we remain in bureaucratic limbo is unknown.....so say tuned!

## Mountain Musings continued

*(Continued from page 1)*

the web site describing access to Lake Glenville and a map on the web site showing a plot of land on the northern side of Pine Creek as the boat dock. Their boaters will add themselves to the ever expanding number of owners and renters in the Trillium Links & Lake Club ([www.trilliumnc.com](http://www.trilliumnc.com)), said to have 34 slips on a companion golfing web site, the 1,456 potential lot owners in the five River Rock properties ([www.riverrocknc.com](http://www.riverrocknc.com)), the ultimately 251 owners of property at the Mountaintop Golf & Lake Club ([www.mountaintopgolfclub.com](http://www.mountaintopgolfclub.com)) and their “ten” slips on the lake, 36 ultimate property owners at The Lake Club ([www.thelakeclub.com](http://www.thelakeclub.com)), and an unknown number of club members and guests using the four rental rooms, two member rooms, and ten boat slips at the Glenville Lake Club ([www.glenvillelakeclub.com](http://www.glenvillelakeclub.com)) owned by members of the Wildcat Cliffs Country Club. In addition to these “keyhole” developments with small lakefront properties serving larger, sometimes very large, off lake developments, we also have community docks serving more contiguous lake communities like Tator Knob or Summerhill or the cluster of docks along Highway 107 across from Cedar Creek Road as well as the steadily increasing number of single family homes directly on the lake, with their single family docks that are in some

cases shared with off lake friends. Unlimited public access is available at the two North Carolina Wildlife boat ramps near the dam or at the boat ramp at Signal Ridge Marina.

What will be the effect of all these old and new lake users? If last summer is a barometer, I will be thrown off my dock at least once by an enormous wake from a speeding wake (ski) boat, my across the cove neighbor will have his pontoon boat thrown up on his dock by a similar wake, we will be afraid to swim on the lake side of our docks for fear of being run over by irresponsibly piloted power boats and/or jet

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# Lake Glenville Water Quality 5: Ephemeral Nephels ?Continued

(Continued from page 1)

Near where Mill Creek and Pine Creek enter the lake one can find sand bars comprised of particles that collect on the bottom almost immediately as they enter the lake. At the other end of the particle size range, things are quite different. A one-micron (39 millionths of an inch) particle will sink at 3 inches per day. Particles of lower density or irregular shape will sink even more slowly. Of course, few particles actually sink directly to the deepest part of the lake. Lake bottom exists at all levels; sediments carried by currents that circulate around in the lake will encounter the bottom at their level.

A less obvious process by which suspended sediments are removed from lake water is by chemical dissolution. Just as sugar or salt can be dissolved in water, the mineral composition of rock and soil is to some extent soluble. Our granitic rocks and soils react slowly with water. The fact that sediment-polluted stormflows are observed to reach the lake within an hour or less implies that their suspended sediments have had too little time to come to equilibrium with the rainwater. Therefore their dissolution continues within the lake. The dissolved part remains in the water, not in particulate form, but in molecular form, which cannot sink or be seen.

In consequence of sinking and dissolution only a fraction of the suspended sediment introduced into the lake is contained in water discharged to the powerhouse. The median turbidity at the level of the discharge outlet (about 80 feet below full pool) of 39 measurements over five summers is only 2.2 nephelometric turbidity units (NTU). That is about half the median turbidity of the inflowing streams, and at the outflow depth there is no evidence of extreme turbidity like stormflows that were shown in Part 4 to be arguably the major mode of sediment input to the lake. Horizontal and vertical mixing processes alter the distribution of suspended sediments within the lake, generally moving sediments from places with high concentrations to those of lower concentration, but do not remove sediment from the water.

Natural variations are usually a confusing jumble of superposed events, but in the early summer of 2006 we were provided a natural experiment. After a period of little rain the lake was in good early-

summer, fair-weather, condition. On 14 June I measured turbidities of less than 2 NTU above the thermocline, and mostly less than 1 NTU below (Figure 1). In particular, the turbidity at 20 feet deep was 1.45 NTU. Then during June 23-26 storms brought over 6 inches of rain to our place on the Mill Creek arm. My June 28 sampling trip revealed that this heavy rain had increased turbidity of the top 10 feet of the lake by a small amount and affected the deep waters scarcely at all, but had injected a plume of turbid water (6.61 NTU) into the upper thermocline some 20 feet deep. The temperature there was more than 6 degrees F colder than at the surface. There was evidence of this plume also in the measurements from the Norton Creek and Pine Creek arms of the lake, but primarily the latter where the turbidity at 20 feet was also over 6 NTU. This subsurface plume of turbid water was of no great importance in itself, but it provided a rare opportunity to learn about lake processes. Because there were no major rain events over the

next few weeks I was able to document the undisturbed evolution of the plume.

By 12 July the sediment concentration in the plume had diminished to 2.64 NTU, and by 26 July it was only about 0.27 NTU greater than the pre-rainstorm concentration at that level. There is some suggestion of sediment sinking, in that the sediment concentrations at levels deeper than 20 feet did not return toward their pre-rain concentrations as rapidly as those above. There is little evidence for vertical mixing of sediments into levels above and below the plume. Evidence of the suspended sediment plume at 20 feet down in diverse parts of the lake suggests that horizontal mixing was largely complete by 28 June. Mostly, the suspended sediment concentration appears to decay in place.

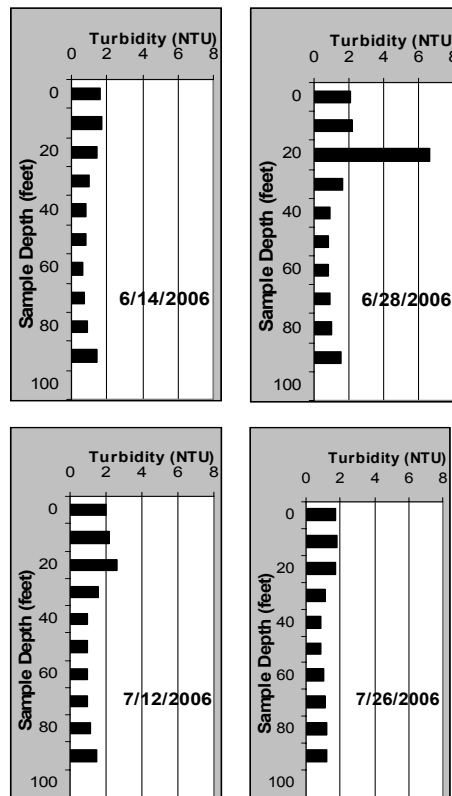


Figure 1. Evolution of suspended sediment concentration in NTU at sampled depths for Talweg North site during June-July, 2006.

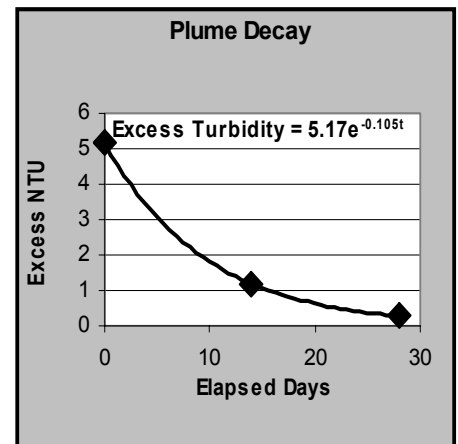


Figure 2. Fit of the exponential model to the measurements. Data for turbidity in excess of the preexisting background level are shown as diamonds; model is solid line.

If we make the plausible assumption that the rate of loss of turbidity is proportional to the turbidity present at any moment, we deduce a model of exponential decay, which is very common in natural processes. Interpreted as an exponential decay process, the measurements specify a model with a turbidity decay rate of about 10 % per day. The fit of this model to the observations is shown in Figure 2. In other terms, the recovery rate of lake water from suspended sediment assaults, expressed as a "half-life" in the lake, is about 61/2 days. That is, if there were no further additions of sediment to the water the turbidity

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## Mountain Musings

continued

skis, and paddleboat users (canoes and kayaks) will confine their excursions to the early morning or late afternoon when the “stink” boaters are back home (and never around the Fourth of July holiday when the lake is full and crazy from sunup to well after sundown). By the late afternoon on most summer Saturdays, the lake bottom will be a cloudy brown in as little as an inch of water, clearing a little on Sunday evening but with five or six feet of visibility not returning until midweek if at all. More trees will fall into the lake and more shoreline will be eroded, the downed trees providing a visual eyesore and a navigational hazard along with being fish habitat and the silt further clouding the lake and choking the remaining fish.

Is this why most of us have come to Lake Glenville? Is this the ambiance that will help the Preserve at Eagle Cove sell its properties? Is this the scenario that will preserve property values around the lake for Jackson County to tax or insure that Lake Glenville remains a governmentally defined pristine lake? I doubt it. Beauty and serenity are what brought most of us to these North Carolina mountains to begin with. Those who can will flee to some new venue when these attractions fade or are destroyed, but most of us will be left to sadly deal with an expensive mess and sad memories of what we did not have to lose.

In the absence of new boating rules and restrictions from Jackson County, the State of North Carolina, North Carolina Wildlife, or Duke Energy, what can we as contiguous property owners and/or boaters do to protect our Lake Glenville and leave it intact for next season’s visitors, let alone those coming the year afterward or in future generations? Very simply, we can exercise common sense and common courtesy. Reasonably boating speeds at a sen-

sible distance from the shoreline will help, as will confining activities like tubing and water skiing to open areas of the lake, not small coves or narrow areas. Common courtesy like slowing down, minimizing wakes, and giving them a wide berth will encourage non-powered craft like sailboats and paddle boats to venture back out onto the lake where they make no noise and throw no shoreline destabilizing wake. More elaborate changes could include adding more electric boats to the two on the lake the past few seasons or choosing lower powered quieter craft when making new boat buying decisions. Signage has been proposed for years by the Friends of Lake Glenville at the Wildlife boat ramps that would promote “Boating Safely” (see page 9), but these were never implemented allegedly due to a series of bureaucratic roadblocks. Implementing these and other public education initiatives could go a long way to alerting the general public, including full time lake side owners as well as renters and daily users, to simple rules of boating safety and courtesy.

If you think “keyholing” is an issue and has a negative effect upon Lake Glenville, what can you do? All of the large communities mentioned at the beginning of this epistle bought their land lawfully and legally and are entitled to the uses to which their properties are being put. But...if the properties had been encumbered as a condition of sale with deed restrictions that blocked commercial or off lake use as has been done in a few communities or home owner associations and individual properties around the lake, the “keyholers” would not have been able to use them as lake front funnels for large off lake populations, assuming multi-slip docks were also excluded. Granted, the sale prices would probably have been lower, but could that not be construed as a socially desirable

sacrifice for the long term preservation of a pristine lake?

Long term and unfortunately probably not until a boating tragedy occurs on Lake Glenville, solutions used on other lakes nationwide will not be enacted, including but not limited to truly vigorous law enforcement on the lake, creation of “go slow” or “no wake” zones within a certain distance of the shoreline as well as in small coves and narrow areas, limitations on engine size or horsepower, speed limits on power boats and jet skis, a permitting system for lake access on weekends and busy holidays, streamlined procedures to allow shoreline stabilization that is affordable, and on and on. Coast Guard Auxiliaries and Maritime Commissions have been used in many places to supplement law enforcement, educate the public, and create and enforce the procedures necessary for safe and sane boating. Individual citizens need to take every opportunity to express their concerns to the lake’s owner, Duke Energy, as well as to their elected local, state, and federal representatives and agencies, since many of the “solutions” enacted at other lakes were achieved through tedious time consuming legislative efforts, including the original law creating minimum age requirements for operating Personal Water Craft in which Lake Glenville residents participated.

In the end, Protecting and Preserving Lake Glenville is up to YOU. YOU need to act, hopefully for the common good and not narrow selfish interests. If you have ideas or initiatives to suggest, send them to [flg28736@yahoo.com](mailto:flg28736@yahoo.com) or directly to me and the best and most interesting of them will be published on line or in future newsletters. The lake we are trying to save is YOURS.



**Lake Clean Up 2007**  
- All Lake Clean Up  
photos by the Jimisons





**FRIENDS OF LAKE GLENVILLE**  
**2008 Membership Application**

\_\_\_\_ New  
\_\_\_\_ Renewal-No Changes  
\_\_\_\_ Renewal-With changes

For renewals only: DO NOT COMPLETE THE DATA INFORMATION IN SECTION A UNLESS THERE HAVE BEEN CHANGES SINCE 2007. PLEASE INDICATE THE STATUS OF YOUR MEMBERSHIP IN THE UPPER RIGHT HAND CORNER, THEN CONTINUE WITH SECTIONS B THROUGH F OF THE APPLICATION.

Today's Date: \_\_\_\_\_

Name(s): \_\_\_\_\_

A) Lake Address: \_\_\_\_\_ "Home" Address: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Phone(Lake): \_\_\_\_\_ Fax(Lake): \_\_\_\_\_ Email (Lake): \_\_\_\_\_  
Phone (Home): \_\_\_\_\_ Fax(Home): \_\_\_\_\_ Email (Home): \_\_\_\_\_  
Lake neighborhood name and/or general area: \_\_\_\_\_  
Lake 911 address if above is PO Box: \_\_\_\_\_

B) Mail all newsletters and other correspondence to \_\_\_lake address or \_\_\_home address (choose one only for whole year).

Type of Resident: \_\_\_Seasonal or \_\_\_Permanent

C) Membership type: \_\_\_\_\_ Voting\* \$45 annually \_\_\_\_\_ Associate \$45 annually

\*Voting member(s) is/are property owners and/or registered voters within one mile of the lake or within Hamburg Township.  
Associate members live outside the voting member area but have an interest in the lake.

Sponsorships: \_\_\_Bronze (\$100 - \$199) \_\_\_ Silver (\$200-\$299) \_\_\_ Gold (\$300 and up) \_\_\_ Other (contact FLG President)  
All Sponsorships include: 1 Family membership, FLG decal, acknowledgment in a future newsletter and on the FLG website

D) Please rank the following FLG programs and projects on a scale from 1 through 10 according to your level of interest (10=high interest; 1=low interest)

\_\_\_ Member recruitment      \_\_\_ Newsletter      \_\_\_ Social events      \_\_\_ Lake Clean Up  
\_\_\_ Water/boating safety      \_\_\_ Relicensing      \_\_\_ Fund raising  
\_\_\_ Lake/shoreline law enforcement      \_\_\_ Water quality      \_\_\_ Sedimentation/Erosion      \_\_\_ Political/legislative  
I am interested in being on a committee \_\_\_yes \_\_\_no. If yes, which committee(s)? \_\_\_\_\_

E) Please indicate an FLG activity interest group you might like to enjoy with other FLG members.  
\_\_\_fly fishing \_\_\_lake fishing \_\_\_ hiking \_\_\_excursions \_\_\_golf \_\_\_tennis \_\_\_boating \_\_\_paddling \_\_\_cards \_\_\_dinner club

F) Form of payment: Check: Check No. \_\_\_\_\_  
Credit card: \_\_\_ VISA \_\_\_ MasterCard [Other cards cannot be accepted at this time.]  
Account # : \_\_\_\_\_ Exp. Date: \_\_\_ / \_\_\_  
Cardholder (print): \_\_\_\_\_ Signature: \_\_\_\_\_

Mail completed form with check or credit card information to: Friends of Lake Glenville  
P.O. Box 493  
Glenville, NC 28736

\* Dues must be received one month prior to Annual Meeting (July 2, 2008), in order to vote at the Annual Meeting on August 2nd, 2008.



# Lake Glenville Water Quality 5: Ephemeral Nephels ?Continued

(Continued from page 6)

would be reduced by half in 6 1/2 days, to one-fourth in about 2 weeks, etc. The slight evidence for mixing suggests that sinking and chemical dissolution may be the dominant processes acting. This new result provides a first quantitative estimate of an important characteristic of our lake. The inferred recovery half-life struck me as surprisingly short. It is based on an implicit assumption that the sampling in fact captured data from the core of the plume, or at least at a consistent level within the plume. There is no way to be sure that such is the case. More detailed measurements, such as from a continuously profiling instrument rather than discrete bottle samples at 10-foot depth intervals, would improve this procedure.

To pursue the issue further within the confines of existing data, I thought to apply the same logic to the recovery of the lake from Hurricane Ivan in 2004. Sampling was done immediately following the hurricane on Sept. 18, and again on Sept. 30, after 12 days of recovery. The only significant rain event for several weeks following Ivan was on Sept. 27, when nearly 3 inches of rain was recorded at the highlands biological station, but only 0.62

inches at Toxaway Mountain. This event did not produce a sediment noticeable plume at any level in the lake, probably because little rain fell in our watershed. As was shown in Part 4, hurricane Ivan greatly increased turbidity at all levels down to 70 feet, not just in a thin layer, so recovery rates could be calculated for several levels. I calculated the decay rates for turbidity at all levels down to 70 feet during Sept. 18-30. The average rate down to a depth of 70 feet corresponds to a sediment half-life of 8 days. Below seventy feet turbidity was perturbed little by Ivan, and during the recovery period it actually increased, again suggesting sinking of sediment from the levels above. I did the same analyses at two other stations with sampled depths to 70 and 60 feet that were observed in 2004 and found suspended sediment half-lives of 8 and 11 days, respectively.

These results are remarkably consistent for this kind of calculation, and indicate that if we could stop sediment inputs to the lake, turbidity would clear within a few weeks. It must be mentioned however that this estimate of the decay rate of suspended sediment concentration relates to the time required for the concentration of newly in-

jected sediment to decay to the background concentration existing at the time of the injection. There was no further improvement of turbidity in the lake after 26 July 2006. The nature and cause of the persistent background sediment concentration is unknown. It may be due to continuing small resuspensions of lake-bottom sediments, or perhaps some fraction of the sediments is both very fine so that it sinks slowly and very resistant to dissolution. However that may be, the important new result of this report is that the recovery half-life of the lake to major suspended sediment assaults is on the order of a week to 10 days. The backside of this statement is that the effects of a single substantial stormflow from a poorly managed watershed can be expected to hang around for almost a month.

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## “Boat Friendly”

- ♥ *Be aware of, and obey, the North Carolina laws of boating.*
- ♥ *Personal watercraft (jet skis) should observe the rules like any other watercraft.*
- ♥ *Slow to 5 mph if within 200ft. of boats, swimmers, fisherman, or docks. When “in doubt”, slow down!*
- ♥ *YOU are responsible for the wake that your boat is throwing and should consider the consequences to others (i.e. dock damage, capsizing small craft, and bank soil erosion)*
- ♥ *Always “give way” to (pass behind) non-powered boats such as sailboats, kayaks, canoes, and rowing craft. (200 ft. is a good gesture).*
- ♥ *Ski and raft towing boats should never go beyond 100ft. of their disabled skiers and have an observer aboard as well as a driver.*
- ♥ *Keep noise within its proper perspective. Sound carries a long distance on water. Keep radios and recorders at a low volume.*
- ♥ *Pick up any “man-made” trash or litter you see floating in the water.*
- ♥ *Always stop and offer assistance to stranded boaters.*

## Friends of Lake Glenville Board of Directors

Carol Adams President	743-1658	casolveit@yahoo.com
Helen Cook, VP	904-321-210	helen@lodgingresources.com
David Leach, Secretary	743-1825	leachga@earthlink.net
Joanne Lindquist Treas.	743-1630	joanne_lindquist2002@yahoo.com
Howard Austin	743-9494	hmaustin@mindspring.com
Richard Becherer	743-0686	richard-becherer@utc.edu
Ken Kitchens	743-2960	kkitchens@mindspring.com
John Cassidy	743-1492	cassidjf@yahoo.com
Doug Odell	743-5079	dodell@juno.com

## Jackson County Board of Commissioners

Jackson County Administration  
401 Grindstaff Cove Road  
Sylva NC 28779  
828-586-4055, 828-586-7506 fax

Kenneth Westmoreland, County Manager 586-7580 (w)

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Friends of Lake Glenville  
PO Box 493  
Glenville NC 28736

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**Fall 2007**



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